

Contract No.:



U S DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION

EASTERN FEDERAL LANDS HIGHWAY DIVISION

**ARKANSAS FOREST HIGHWAY
OUACHITA NATIONAL FOREST
PROJECT AR PFH 159(1)**

SOLICITATION

IFB NO. DTFH71-08-B-00019

**This Contract Cites
Standard Specifications FP-03
U.S. Customary**

**CONTRACTOR:
ADDRESS:**

STATE: Arkansas

COUNTY: Polk County

PARK / REFUGE / NF: Ouachita National Forest

ROADWAYS:	STATIONS	FEET
Caddo Road (CR-64)	11+96 to 12+97	130.0

PROJECT LENGTH TOTAL: 130 feet

TYPE OF IMPROVEMENT:

Reconstruction of a mechanically stabilized earth retaining wall, with restoration of the gravel surface and other miscellaneous work at the Buckeye Vista Overlook on Caddo Road (CR-64).

TABLE OF CONTENTS

	<u>Page</u>
Notice to Bidders	1 through 2
Checklist for Bid Submission	1 through 2
*New Questionnaire Form on Calendar Days	1 Page
*SF-1442 Solicitation, Offer, and Award	A-1 through A-2
Continuation of SF 1442	A-3 through A-4
Bid Schedule Instructions	1 through 2
*Bid Schedule	B-1 through B-4
*SF-24 Bid Bond	C-1 through C-2

FEDERAL ACQUISITION REGULATION & TRANSPORTATION ACQUISITION REGULATION SOLICITATION PROVISIONS & CONTRACT CLAUSES

Index to Federal and Transportation Acquisition Regulations	1 through 6
Representations and Certifications (OCRA online)	D-1
Instructions to Bidders	E-1
*Socioeconomic Program Requirements	F-1 through F-8
Minimum Wage Schedule	F-9 through F-12
*General Contract Requirements	G-1 through G-4
Construction Contract Requirements	H-1

SPECIFICATIONS

Special Contract Requirements	J-1 through J-21
Plans	29 Pages
Soils and Foundation Report	59 Pages

***BOLD FACED ITEMS ARE TO BE INCLUDED WITH THE BID SUBMITTAL PACKAGE**

NOTICE TO BIDDERS

CONTRACT FORMAT:

Offerors should note that the format of this contract is in accordance with Federal Acquisition Regulations (FAR), promulgated by the General Services Administration (GSA), effective April 1, 1984, including all applicable revisions. Applicable FAR provisions and clauses are incorporated in this contract by reference or full text as indicated in the INDEX before the D-page in this booklet. FAR provisions and clauses incorporated by reference can be accessed on the Internet on the GSA website at www.arnet.gov/far/. Offerors are encouraged to review the documents thoroughly before bidding.

PROPOSAL BOOKLET AND OFFER SUBMITTAL:

It is the responsibility of the Offeror to verify that this proposal is complete as listed in the Table of Contents. The Offeror is responsible for submitting all required forms and documents with the offer. Offerors should use the Checklist for Bid Submittal included in this booklet to check that their bids are complete. **New Questionnaire Form on Calendar Days with required signature.**

CONSTRUCTION CONTRACTS:

As stated in FAR Clause 52.236-1, the **Contractor shall perform on the site, and with its own organization, work equivalent to at least 50%.** Additional guidance is given in FAR Subpart 35.005 where the majority of the project work is complex and specialized such as restoration work, bridge painting, and proprietary construction techniques (i.e. proprietary Cintec arch strengthening.) There are exceptions and they will be reviewed on a case-by-case basis.

HAZARDOUS MATERIALS IDENTIFICATION AND MATERIAL SAFETY DATA:

As required by FAR Clause 52.223-3, Hazardous Materials Identification and Safety Data, the apparent low Offeror must submit prior to award a Material Safety Data Sheet (MSDS's) for all hazardous materials that the Offeror identifies in paragraph (b) of this clause in the D-pages of this booklet. Failure to submit MSDS's may render the Offeror ineligible for award of contract. The apparent low Offeror should submit their MSDS's within two weeks after bid opening.

ATTENTION LARGE BUSINESSES - UTILIZATION OF SMALL BUSINESS CONCERNS:

Large business Offerors should note their responsibilities in the awarding of subcontracts in accordance with FAR Clause 52.219-8, Utilization of Small Business Concerns. The offeror, if a large business concern, should note its responsibility to establish and conduct a Subcontracting Plan in accordance with FAR Clause 52.219-9, Alternate I, Small Business Subcontracting Plan. If the apparent Low Offeror is a LARGE BUSINESS it will be required to submit a Subcontracting Plan within 2 weeks of receipt of request from the Contracting Officer. If the apparent low offeror fails to submit a subcontracting plan acceptable to the Contracting Officer within the allowable time, the offeror may be ineligible for award of the contract. PLEASE NOTE: A sample plan is included in this solicitation package for your use.

FINANCING ASSISTANCE: Minority, Women-owned, and Disadvantaged Business Enterprises (DBE's). The Department of Transportation (DOT) offers working capital financing assistance for transportation related contracts. DOT's Short-Term Lending Program (STLP) offers lines of credit to finance accounts receivable. Maximum line of credit is \$750,000 with interest at the prime rate. For further information, call (800) 532-1169. Internet address: <http://osdbuweb.dot.gov>.

INTERNET BASED DATA BASES - REQUIRED INPUT: According to the FAR Subpart 4.1102 contractors **MUST** be registered in Central Contractor Registration (CCR) **prior** to the award of any contract. Access the following web site to register: www.ccr.gov

According to the FAR Subpart 4.1201 contractors **MUST** complete their Online Annual Representations and Certifications Application (ORCA) **prior** to the closing date of the bid on line at <http://orca.bpn.gov/>.

According to the FAR Subpart 22.1302 (b) contractors and sub-contractors **MUST** complete the required Annual Vets-100 Form in order to be eligible for a contract award. It can be completed on-line at <http://vets100.cudenver.edu/>.

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According to the FAR Subpart 22.1302 (b) contractors and sub-contractors **MUST** complete the required Annual Vets-100 Form in order to be eligible for a contract award. It can be completed on-line at <http://vets100.cudenver.edu/>.

NOTICE TO BIDDERS - (CONT'D.)

This should be completed before submitting a bid package.

PAYMENT:

Offerors are advised to review the Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP), subsection 109.05, concerning **direct** and **indirect** payment included under a pay item in the bid schedule.

PROGRESS PAYMENTS:

ALL payments will be made via Electronic Funds Transfer (EFT) as such; the payment information in the CCR must be accurate in order for contractors' invoices to be considered proper invoices for the purpose of prompt payment under DOT contracts. Contractors must input and maintain (update as necessary) their EFT information in the CCR database. Offerors are advised that under FAR Clause 52.232-5, Payments Under Fixed Price Construction Contracts, upon request, progress payments will include premiums paid by the Contractor to obtain performance and payment bonds as required under this contract. These payments shall not be made in addition to the contract price. As specified in the FP, "Section 151 - MOBILIZATION", payments for performance and payment bond premiums shall be included in mobilization.

WELFARE-TO-WORK INITIATIVE:

The President's Welfare Reform Bill was initiated to assist welfare recipients and hopefully aid welfare recipients to find gainful employment. In support of this bill, Contractors are encouraged to hire welfare recipients whenever possible and to use welfare recipients in performance of duties on Government contracts.

INCREASING SEAT BELT USE IN THE UNITED STATES:

The President's Executive Order 13043 dated April 16, 1997, was issued to increase the use of seat belts in the United States. In support of this Order, contractors and subcontractors are encouraged to adopt and enforce on-the-job seat belt policies for their employees when operating company-owned, rented, or personally owned vehicles.

OBTAINING BID DOCUMENTS:

Bid documents **will not be** mailed. All bid documents are available for direct download from the Federal Business Opportunities (FBO) website:

<https://www.fbo.gov/index?s=opportunity&mode=list&tab=list&cck=1&au=&ck=>

Type DTFH71 in Keywords/Sol. # Block then click on GO, or the Eastern Federal Lands Highway Division website: <http://www.efl.fhwa.dot.gov/contracting/Documents.aspx>

Contractors are encouraged to register on the FBO website (for this specific project) in order to receive Email Notifications automatically when a document is added or updated for this specific project. All questions about this construction project must be emailed to the following address:

eflhd.contracts@fhwa.dot.gov.

THE CONTRACTOR IS SOLELY RESPONSIBLE FOR MONITORING THE WEB PAGES NOTED ABOVE FOR ALL CHANGES TO THE SOLICITATION AND ACTING ON SAID CHANGES.

PLEASE NOTE: for security reasons, individuals requiring access to all government buildings must present a valid photo ID and be escorted to their destination by a Government employee. All visitors attending bid openings are urged to arrive at least 1 hour prior to schedule bid opening. All visitors must register with the receptionist in Room 100. A Government employee will collect all bids. Prior to bid opening, a Government employee will escort all bidders to the bid opening. Unescorted visitors will be denied entry and no exceptions will be made.

CHECKLIST FOR BID SUBMISSION

The following is a checklist of items included in the proposal/bid package that are required to be completed and returned (or filled in on-line) to the address in Block 8 of the Standard Form 1442, Solicitation, Offer, and Award (page A-1). This checklist is for informational purposes only and is not required to be filled out by the bidder. **Failure to submit a complete bid may be cause to reject your bid.**

1. Bid Envelope:

- a. Addressed as shown in Block 8 of Page A-1 ☐
- b. In lower left corner, indicate Solicitation No., Project Name & Number, time for Receipt of Offers and send to Room 105. ☐

2. Standard Form 1442: Solicitation, Offer and Award (Pages A-1 and A-2)

- a. Block 14: Name and Address of Bidder. ☐
- b. Block 15: Telephone Number of Bidder. ☐
- c. Block 16: Remittance Address if different from Block 14. ☐
- d. Block 19: **All** Amendments Acknowledged, with dates of Amendments. ☐
- e. Block 20: Bid is signed and dated. ☐

3. Bid Schedule - (Pages B-1 through B-4)

- a. Unit bid price and bid amount provided for each pay item in numbers. ☐
- b. Corrections initialed. ☐
- c. Price Evaluation eligibility is indicated on the Bid Summary page. ☐

4. Standard Form 24, Bid Bond (Pages C-1 through C-2) (Required if bid guarantee is bid bond)

- a. Date executed ☐
- b. Legal name and address of bidder. ☐
- c. Type of organization. ☐
- d. State of incorporation (if applicable). ☐
- e. Name and business address of Treasury approved surety. ☐
- f. Penal sum of bond (not less than 20% of bid total). ☐
- g. Bid identification. ☐
- h. Signature of Bidder ☐
- i. Seal, if corporation ☐
- j. Signature of Surety ☐
- k. Seal, if corporation ☐

BIDS RECEIVED WITHOUT A VALID BID BOND WILL BE REJECTED.

5. Power of Attorney.

- a. Dated on or before execution date of bond ☐
- b. Power has original signature of surety, or is embossed with surety's seal in the certification section ☐

BIDS RECEIVED WITHOUT A VALID POWER OF ATTORNEY WILL BE REJECTED.

CHECKLIST FOR BID SUBMISSION

6. Fill In's. The following full text Clauses and/or Provision numbers shall be checked or filled in and return with the bid package:

- a. 52.219-4 – HubZone ONLY - See Section F, Clause 52-219-4, paragraph "C", check block if wavier is applicable.

☐

7. Bidder's Qualifications form (provided separately as part of the Bid Documents Package). Form completed, signed and submitted with bid

☐

8. Bidder's Questionnaire on Calendar Days signature required (if not completed bid shall be found non-responsive).

☐

9. Sub-Contracting Plan - Large Businesses Only: Submittal with the bid is not mandatory, **but it is encouraged**, as it will speed up the award process should your firm be the apparent low bid.

☐

THE FOLLOWING THREE ITEMS ARE NOT TO BE SUBMITTED WITH THE BID; BUT FAILURE TO COMPLETE THE REQUIREMENTS WILL BE CAUSE TO REJECT THE BID.

10. Central Contractor Registration (CCR): The Contractor is currently registered in the Internet-Based CCR database at <http://www.ccr.gov>.

☐

11. Online Representations and Certifications Application (ORCA): The Contractor's Representations and Certifications have been input online via the Internet-Based ORCA electronic database at <http://orca.bpn.gov>.

☐

12. Vets100 Reporting: The Contractor has completed the annual Internet-Based reporting requirement online at <http://vets100>.

☐

NOTE: THE CONTRACTOR IS FULLY RESPONSIBLE TO VERIFY THAT ALL DATA IN THE THREE DATABASES IS CORRECT EACH TIME A BID PACKAGE IS SUBMITTED. FAILURE PROPERLY INPUT AND/OR UPDATE YOUR DATA MAY CAUSE THE BID TO BE REJECTED.

Bidders Qualification questionnaire regarding the preparation of the bid for time:

- 1) Does the bid for time include the impact of normal weather conditions on the work of the Contract?
- 2) Does the bid for time include the impact of the terms of the Contract Specifications regarding work restrictions - including all identified delays, suspensions, and shut-downs?
- 3) Does the bid for time include sufficient time to allow that all contract work can be completed within contract time without the imposition of liquidated damages?
- 4) Does the bid for time include time for the review and approval process for all submittals required by the Contract?
- 5) Does the bid for time include time for the review and approval process for required drawings submitted under Subsection 104.03 of the Specifications?
- 6) Does the bid for time include the lead time required for the procurement, manufacture, and delivery of materials that are to be incorporated into the Contract work?
- 7) Does the bid for time include sufficient time to accommodate the fact that the date of Notice to Proceed is conditional upon the Government awarding the contract up to 60 days after the bid opening?
- 8) Does the bid for time include the 14 days after the award of the Contract that the Contractor has to provide Performance and Payment bonds?
- 9) Does the bid for time include sufficient time to accommodate the fact that the Contracting Officer has up to 30 days after receipt of acceptable Performance and Payment bonds to issue the Notice to Proceed?

I hereby certify that the answer to each and every one of the questions listed above is yes.

Signature of Authorized Representative

Title

Date

Note: If the questionnaire is not signed the bid shall be found non-responsive and rejected.

SOLICITATION, OFFER, AND AWARD <i>(Construction, Alteration, or Repair)</i>	1. Solicitation No. DTFH71-08-B-00019	2. Type of Solicitation <input checked="" type="checkbox"/> Sealed Bid (<i>IFB</i>) <input type="checkbox"/> Negotiated (<i>RFP</i>)	3. Date Issued 05/27/2008	Page of Pages 1 OF 4
	IMPORTANT - The "offer" section on the reverse must be fully completed by offeror.			
4. Contract No.	5. Requisition/Purchase Request No.	6. Project No. AR PFH 159(1)		
7. Issued By: Federal Highway Administration Eastern Federal Lands Highway Division Loudoun Tech Center, Room 105 21400 Ridgetop Circle Sterling, Virginia 20166-6511	CODE: N/A:	8. Address Offer To: See Block 7		
9. FOR INFORMATION See Blocks 9A & 9B	A. Name: Joanne Lowe	B. Telephone No. (Include area code) (NO COLLECT CALLS) Email All Questions/Inquiries To: eflhd.contracts@fhwa.dot.gov		

See Continuation
of SF 1442

SOLICITATION

NOTE: In sealed bid solicitations "offer" and "offeror" mean "bid" and "bidder"

10. The Government requires performance of the work described in these documents (title, identifying no., date):
This Invitation for Bids is for the Arkansas Forest Highway, Ouachita National Forest, in Polk County, AR in strict accordance with the Solicitation/Contract instructions, notices, clauses, provisions, *items listed below, and for the quantities of work actually performed at the unit prices as bid in the Bid Schedule, including all applicable Federal, State, and local taxes.

- * FP - Standard Specification for Construction of Roads & Bridges on Federal Highway Projects.
- * Bid Schedule, Section B - pages B-1 through B-4.
- * Special Contract Requirements, Section J - pages J-1 through J-21.
- * Plans (Drawings), Sheets 1 through 29.
- * Soils and Foundation Report No. 11-07, pages 1 through 59.

11. The Contractor shall begin performance within **10** calendar days and complete it within calendar days after receiving

☐ Award, ☒ Notice to Proceed. This performance period is ☒ mandatory, ☐ negotiable. (See *Continuation Sheet)

12A. THE CONTRACTOR MUST FURNISH ANY REQUIRED PERFORMANCE AND PAYMENT BONDS? (If "YES," indicate within how many calendar days after award in Item 12B.) ☒ YES ☐ NO SEE SUBSECTION 102.06 OF FP.

12B. CALENDAR DAYS
Within **14** calendar days after
Notice of Award

13. ADDITIONAL SOLICITATION REQUIREMENTS:

- a. Offers in original and **0** copies to perform the work required are due at the place specified in Item 8 by **2:00 PM** local time **07/01/2008**. If this is a sealed bid solicitation, offers will be publicly opened at that time. Sealed envelopes containing offers shall be marked to show the offeror's name and address, the solicitation number, and the date and time offers are due.
- b. An offer guarantee ☒ **is**, ☐ is not required.
- c. All offers are subject to the (1) work requirements, and (2) other provisions and clauses incorporated in the solicitation in full text or by reference.
- d. Offers providing less than **60** calendar days for Government acceptance after the date offers are due will not be considered and will be rejected.

OFFER (Must be fully completed by offeror)

14. Name and Address of Offeror (Include ZIP code)	15. Telephone No. (Include area code)
	16. Remittance Address (Include only if different than Item 14)
CODE	FACILITY CODE

17. The offeror agrees to perform the work required at the prices specified below in strict accordance with the terms of this solicitation if this offer is accepted by the Government in writing within ___ calendar days after the date offers are due. (Insert any number equal to or greater than the minimum requirement stated in Item 13D. Failure to insert any number means the offeror accepts the minimum in Item 13D.

AMOUNTS ➡ See Bid Schedule - Section "B" Pages

18. The offeror agrees to furnish any required performance and payment bonds.

19. ACKNOWLEDGEMENT OF AMENDMENTS

(The offeror acknowledges receipt of amendments to the solicitation - give number and date of each)

AMENDMENT NO.								
DATE								

20a. Name and title of person authorized to sign offer (Type or print)	20B. Signature	20C. Offer Date
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AWARD (To be completed by Government)

21. Items Accepted:

22. Amount	23. Accounting and appropriation data	
24. SUBMIT INVOICES TO ADDRESS SHOWN IN (4 copies unless otherwise specified)	ITEM See Block 26	25. OTHER THAN FULL AND OPEN COMPETITION PURSUANT TO <input type="checkbox"/> 15 USC 637(a)) <input type="checkbox"/> 41 USC 253(c) ()
26. ADMINISTERED BY Federal Highway Administration Eastern Federal Lands Highway Division 21400 Ridgetop Circle Sterling, Virginia 20166-6511		27. PAYMENT WILL BE MADE BY: Federal Highway Administration Eastern Federal Lands Highway Division Finance Division, Room 357 21400 Ridgetop Circle Sterling, Virginia 20166-6511

CONTRACTING OFFICER WILL COMPLETE ITEM 28 OR 29 AS APPLICABLE

<input type="checkbox"/> 28. NEGOTIATED AGREEMENT <i>(Contractor is required to sign this document and return ___ copies to issuing office.)</i> Contractor agrees to furnish and deliver all items or perform all work requirements identified on this form and any continuation sheets for the consideration stated in this contract. The rights and obligations of the parties to this contract shall be governed by (a) this contract award, (b) the solicitation, and (c) the clauses, representations, certifications, and specifications incorporated by reference in or attached to this contract.		<input type="checkbox"/> 29. AWARD <i>(Contractor is not required to sign this document.)</i> Your offer on this solicitation is hereby accepted as to the items listed. This award consummates the contract, which consists of (a) the Government solicitation and your offer, and (b) this contract award. No further contractual document is necessary.	
30a. Name and Title of Contractor or Person Authorized to Sign (Type or print)		31a. Name of Contracting Officer (Type or print)	
30b. Signature	30C. Date	31b. United States of America BY	31C. Date

CONTINUATION OF SF 1442

Block 2:

This project is **UN-RESTRICTED** - Bids will be accepted from **ALL** eligible business concerns.

This procurement is made pursuant to Public Law 100-656 Title VII, which established the Small Business Competitiveness Demonstration Program. This procurement falls under North American Industry Classification System (NAICS) code 237310 - Highway, Street, and Bridge Construction (see FAR Subpart 19.10)

The award of this project is subject to a 10% price evaluation preference for eligible HubZone Small Business Concerns (must be on the SBA listing) (see FAR Clause 52.219-4).

Facsimile and electronic bids will not be accepted.

PHYSICAL DATA AVAILABLE FOR REVIEW

1. Manual on Uniform Traffic Control Devices for Streets and Highways, 2003 Edition, published by the Federal Highway Administration. <http://mutcd.fhwa.dot.gov>.
2. National Park Service Sign Manual, revised - January 1988, United States Department of the Interior. <http://www.nps.gov/npsigns>.
3. Soils and Foundation Report

Block 9:

In accordance with FAR Provision 52.236-27, Site Visit, a Government representative can be available to show the project to prospective bidders. **All requests** for site visits and/or questions concerning this construction project to must be emailed to

eflhd.contracts@fhwa.dot.gov. Interested parties must provide the Solicitation Number and the relevant project name with all requests and questions.

*Block 11:

The maximum time for completion of the contract is * **61** calendar days.

The completion time for the contract will be the time offered by the successful bidder, **not to exceed** the maximum time above.

Notice to Proceed, or date specified in the Notice to Proceed will be issued within 30 days following receipt of acceptable performance and payment bonds.

Work Restrictions:

Work Restrictions can be found in SCR Section 108 and 156.

Block 12A:

Furnish performance and payment bonds in accordance with FAR Clause 52.228-15.

CONTINUATION OF SF 1442

Block 13:

A bid guarantee in the amount of not less than 20 percent of the bid price or \$3 million, whichever is less, is required with this bid. If the bidder fails to provide the required bid guarantee, such failure may require rejection of the bid. Reference FAR Provision 52.228-1, Bid Guarantee.

Other:**Work Requirements:**

The work requires contractor construction experience per Section 255 of the SCR's.

Section 255.04. Add the following:

Provide personnel experienced in the construction of mechanically-stabilized earth walls using geogrid reinforcement, as evidenced by the successful completion of at least 2 mechanically stabilized earth walls. Submit the qualifications of the personnel to the CO for approval at least two weeks prior to beginning geogrid reinforcement work.

The estimated price is expected to fall within the price range of **\$250,000 to \$500,000**.

Responsibility of bidders shall be evaluated in accordance with the information provided on the Bidder's Qualification Form, which can be downloaded from FHWA web site. FP-03 versions can be downloaded at the FHWA web site. FHWA web site is <http://www.efl.fhwa.dot.gov/contracting/Documents.aspx>.

BID SCHEDULE INSTRUCTIONS

PROJECT: AR PFH 159(1)

BIDDERS PLEASE NOTE: Before preparing the bid, carefully read the Instructions to Bidders. While preparing the bid, comply with the following:

COMPLETING THE BID SCHEDULE

Complete the Bid Schedule(s) by handwriting in ink or typing. Specify a Unit Bid Price, in figures with cents to only two decimal places, for each pay item in the Unit Bid Price column for which a quantity is given. Do not enter or tender a Unit Bid Price for any pay item for which no estimated quantity appears in the Bid Schedule. Determine the products of the respective unit prices and quantities, and show them, in figures, in the Amount Bid column. If a Unit Bid Price and Amount Bid have been inserted by the Government for a pay item, do not change the Unit Bid Price and Amount Bid for the pay item. Determine the Bid Total by adding the amounts of the several items, and show in the block provided on **Page B-3**. In case of multiplication errors, the Amount Bid for the item will be based on the Unit Bid Price.

To be eligible for award, bidders must submit prices for each pay item.

Review Subsection 109.05 of the FP regarding scope of payment for direct and indirect payment work.

SCHEDULE OF WORK

The Bid Schedule is comprised of the following:

Schedule A – Consists of the reconstruction of a mechanically stabilized earth retaining wall, with restoration of the gravel surface and other miscellaneous work at the Buckeye Vista Overlook on Caddo Road (CR-64).

BIDDING OF CALENDAR DAYS

Determine the number of calendar days necessary to complete Schedule A work from Notice To Proceed to contract completion. **Specify the number of calendar days (NOT to exceed the maximum number of calendar days shown in Block 11 of the SF-1442)** in the space provided on the **Bid Summary** page. Failure to specify a number of calendar days for contract completion indicates the bidder accepts the maximum contract completion time provided in Block 11 of the SF-1442.

In developing a construction schedule to determine the number of calendar days included in their bid, bidders should include the work limitations shown in the Special Contract Requirements

(SCR's). Specific work limitations may be (but are not limited to): holidays, weekends; rush hours; night work; no work periods; work or traffic control phasing. Bidders are advised to consider those work items that are weather sensitive and when those work items will be performed. Specific work items are (but not limited to): those that require a minimum ambient air temperature (asphalt paving and surface treatment, pavement striping, stone masonry); those that require maintaining a minimum surface temperature (concrete pavement, structural concrete, painting); and those that have specific planting seasons (turf establishment, sod, trees and plants). Bidders are also advised to consider time required for preparing material and drawing submittals, and the allowable Government review times for those submittals (Subsection 104.03 of the FP and SCR's). The total calendar days bid should also include any work limitations and any delay days or contractor winter shutdowns required due to weather sensitive work items.

When evaluating the bids, the Government will consider the Contract Administrative Cost for the project to be \$500 per calendar day bid. The Contract Administrative Cost is only used to determine the Total Price of Project.

Add the **Bid Total(s)** and the **Contract Administrative Cost(s)** for each schedule of work as directed on the **Bid Summary** page(s). Show the **Total Price of Project** in the space provided on the **Bid Summary** page.

BASIS FOR AWARD

The contract will be awarded to the responsive, responsible bidder with the lowest **Total Price of Project**, which is defined as:

Bid Total of Schedule A + Contract Administrative Cost of Schedule A

The number of calendar days specified by the successful bidder for the completion of Schedule A work will become the performance period for the contract.

NOTE: Contract Administration Cost is used for ranking purposes only.

Bid Schedule

Project: AR PFH 159(1)
OUACHITA NATIONAL FOREST

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
15101-0000	MOBILIZATION		
	ALL	Lump Sum	\$_____
15201-0000	CONSTRUCTION SURVEY AND STAKING		
	ALL	Lump Sum	\$_____
15401-0000	CONTRACTOR TESTING		
	ALL	Lump Sum	\$_____
15705-0100	SOIL EROSION CONTROL, SILT FENCE		
	190		
	LNFT	\$_____	\$_____
15705-0500	SOIL EROSION CONTROL, TEMPORARY CULVERT PIPE (12" FLEXIBLE PLASTIC)		
	130		
	LNFT	\$_____	\$_____
15706-0200	SOIL EROSION CONTROL, CHECK DAM		
	3		
	EACH	\$_____	\$_____
20103-0000	CLEARING AND GRUBBING		
	210		
	SQYD	\$_____	\$_____
20303-3500	REMOVAL OF STONE MASONRY		
	90		
	SQYD	\$_____	\$_____
20701-1000	EARTHWORK GEOTEXTILE, TYPE III-A		
	110		
	SQYD	\$_____	\$_____
20703-0000	GEOGRID		
	1,000		
	SQYD	\$_____	\$_____
20801-0000	STRUCTURE EXCAVATION		
	600		
	CUYD	\$_____	\$_____

Bid Schedule A

Project: AR PFH 159(1)
OUACHITA NATIONAL FOREST

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
25501-1000	MECHANICALLY STABILIZED EARTH WALL, WELDED WIRE FACE 1,200 SQFT	\$ _____	\$ _____
25510-0000	SELECT GRANULAR BACKFILL 500 CUYD	\$ _____	\$ _____
30802-2000	ROADWAY AGGREGATE, METHOD 2 100 TON	\$ _____	\$ _____
60101-0000	CONCRETE (MSE WALL) 20 CUYD	\$ _____	\$ _____
60501-0000	STANDARD UNDERDRAIN SYSTEM 140 LNFT	\$ _____	\$ _____
60504-0000	GEOCOMPOSITE SHEET DRAIN SYSTEM (MSE WALL) 90 SQYD	\$ _____	\$ _____
61701-4400	GUARDRAIL SYSTEM SBLG (LOGRAIL ON STONE PEDESTAL) 130 LNFT	\$ _____	\$ _____
62002-0000	STONE MASONRY 110 SQYD	\$ _____	\$ _____
62401-0100	FURNISHING AND PLACING TOPSOIL, 2-INCH DEPTH 520 SQYD	\$ _____	\$ _____
62502-0000	TURF ESTABLISHMENT 520 SQYD	\$ _____	\$ _____
62901-0500	ROLLED EROSION CONTROL PRODUCT, TYPE 2.A 210 SQYD	\$ _____	\$ _____
63316-1000	REMOVE AND RESET SIGN 1 EACH	\$ _____	\$ _____

Bid Schedule A

Project: AR PFH 159(1)

OUACHITA NATIONAL FOREST

Pay Item No.	Estimated Quantity	Unit Bid Price	Amount Bid
63502-1300	TEMPORARY TRAFFIC CONTROL, DRUM 12 EACH	\$_____	\$_____
63503-0400	TEMPORARY TRAFFIC CONTROL, CONCRETE BARRIER 130 LNFT	\$_____	\$_____
63504-1000	TEMPORARY TRAFFIC CONTROL, CONSTRUCTION SIGN 100 SQFT	\$_____	\$_____
63506-0500	TEMPORARY TRAFFIC CONTROL, FLAGGER 400 HOUR	\$12.00	\$4,800.00

TOTAL \$_____

Submitted by: _____
Name of Bidder

BID SUMMARY

Project AR PFH 159(1)
(Complete for Pages B-1 through B-3)

(1) **Schedule A Bid Total (from Page B-3)** \$ _____

Contract Administrative Cost

Number of calendar days necessary to complete all Schedule A work
from Notice to Proceed (or date specified in the Notice to Proceed) to
completion of Schedule A.

(2) _____ **calendar days x \$500 per calendar day**
(in accordance w/FP-03 Sec. 108.04) = \$ _____

Total Price of Project for evaluation purposes only:

(1) Bid Total for Schedule A (1) \$ _____
+ (2) Contract Administrative Cost for Schedule A (2) \$ _____

= **EVALUATED TOTAL PRICE OF PROJECT** \$ _____

Does the Bidder claim the Price Evaluation Preference for HUBZone Small Business
Concerns as defined in FAR Clause 52.219-4?

Yes

☐

No

☐

BID BOND <i>(See instruction on reverse)</i>	DATE BOND EXECUTED <i>(Must not be later than bid opening date)</i>	OMB NO.: 9000-0045
--	---	---------------------------

Public reporting burden for this collection of information is estimated to average 25 minutes per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to the FAR Secretariat (MVR), Federal Acquisition Policy Division, GSA, Washington, DC 20405.

PRINCIPAL <i>(Legal name and business address)</i>	TYPE OF ORGANIZATION <i>("X" one)</i>	
	<input type="checkbox"/> INDIVIDUAL	<input type="checkbox"/> PARTNERSHIP
	<input type="checkbox"/> JOINT VENTURE	<input type="checkbox"/> CORPORATION
		STATE OF INCORPORATION

SURETY(IES) *(Name and business address)*

PENAL SUM OF BOND					BID IDENTIFICATION	
PERCENT OF BID PRICE	AMOUNT NOT TO EXCEED				BID DATE	INVITATION NO.
	MILLION(S)	THOUSAND(S)	HUNDRED(S)	CENTS		
					FOR <i>(Construction, Supplies, or Services)</i>	

OBLIGATION:

We, the Principal and Surety(ies) are firmly bound to the United States of America (hereinafter called the Government) in the above penal sum. For payment of the penal sum, we bind ourselves, our heirs, executors, administrators, and successors, jointly and severally. However, where the Sureties are corporations acting as co-sureties, we, the Sureties, bind ourselves in such sum "jointly and severally" as well as "severally" only for the purpose of allowing a joint action or actions against any or all of us. For all other purposes, each Surety binds itself, jointly and severally with the Principal, for the payment of the sum shown opposite the name of the Surety. If no limit of liability is indicated, the limit of liability is the full amount of the penal sum.

CONDITIONS:

The Principal has submitted the bid identified above.

THEREFORE:

The above obligation is void if the Principal - (a) upon acceptance by the Government of the bid identified above, within the period specified therein for acceptance (sixty (60) days if no period is specified), executes the further contractual documents and gives the bond(s) required by the terms of the bid as accepted within the time specified (ten (10) days if no period is specified) after receipt of the forms by the principal; or (b) in the event of failure to execute such further contractual documents and give such bonds, pays the Government for any cost of procuring the work which exceeds the amount of the bid.

Each Surety executing this instrument agrees that its obligation is not impaired by any extension(s) of the time for acceptance of the bid that the Principal may grant to the Government. Notice to the surety(ies) of extension(s) are waived. However, waiver of the notice applies only to extensions aggregating not more than sixty (60) calendar days in addition to the period originally allowed for acceptance of the bid.

WITNESS:

The Principal and Surety(ies) executed this bid bond and affixed their seals on the above date.

PRINCIPAL				
SIGNATURE(S)	1.	2.	3.	<i>Corporate Seal</i>
		<i>(Seal)</i>	<i>(Seal)</i>	
NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.	3.	

INDIVIDUAL SURETY(IES)		
SIGNATURE(S)	1.	2.
	<i>(Seal)</i>	<i>(Seal)</i>
NAME(S) <i>(Typed)</i>	1.	2.

CORPORATE SURETY(IES)			
SURETY A	NAME & ADDRESS	STATE OF INC.	LIABILITY LIMIT (\$)
	SIGNATURE(S)	1.	2.
	NAME(S) & TITLE(S) <i>(Typed)</i>	1.	2.
			<i>Corporate Seal</i>

SURETY B	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY C	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY D	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY E	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY F	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		
SURETY G	NAME & ADDRESS		STATE OF INC.	LIABILITY LIMIT (\$)	<i>Corporate Seal</i>
	SIGNATURE(S)	1.	2.		
	NAME(S) & TITLE(S) (Typed)	1.	2.		

INSTRUCTIONS

1. This form is authorized for use when a bid guaranty is required. Any deviation from this form will require the written approval of the Administrator of General Services.
2. Insert the full legal name and business address of the Principal in the space designated "Principal" on the face of the form. An authorized person shall sign the bond. Any person signing in a representative capacity (e.g., an attorney-in-fact) must furnish evidence of authority if that representative is not a member of the firm, partnership, or joint venture, or an officer of the corporation involved.
3. The bond may express penal sum as a percentage of the bid price. In these cases, the bond may state a maximum dollar limitation (e.g., (e.g., 20% of the bid price but the amount not to exceed _____ dollars).
4. (a) Corporations executing the bond as sureties must appear on the Department of the Treasury's list of approved sureties and must act within the limitation listed therein. Where more than one corporate surety is involved, their names and addresses shall appear in the spaces (Surety A, Surety B, etc.) headed "CORPORATE SURETY(IES)." In the space designed "SURETY(IES)" on the face of the form, insert only the letter identification of the sureties.

(b) Where individual sureties are involved, a completed Affidavit of Individual surety (Standard Form 28), for each individual surety, shall accompany the bond. The Government may require the surety to furnish additional substantiating information concerning its financial capability.
5. Corporations executing the bond shall affix their corporate seals. Individuals shall execute the bond opposite the word "Corporate Seal"; and shall affix an adhesive seal if executed in Maine, New Hampshire, or any other jurisdiction requiring adhesive seals.
6. Type the name and title of each person signing this bond in the space provided.
7. In its application to negotiated contracts, the terms "bid" and "bidder" shall include "proposal" and "offeror."

CONTRACT CLAUSES INDEX

FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)

(Updated thru FAC 2005-20 on 09/06/2007)

52.252-2 Clauses Incorporated By Reference (Feb 1998)

This contract incorporates one or more clauses by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. Also, the full text of a clause may be accessed electronically at this address: www.arnet.gov/far/

(End of Clause)

FAR & TAR CLAUSES INCORPORATED BY REFERENCE

CLAUSE	TITLE	DATE	REMARKS
52.202-01	DEFINITIONS	Jul-04	
52.203-03	GRATUITIES	Apr-84	
52.203-05	COVENANT AGAINST CONTINGENT FEES	Apr-84	
52.203-07	ANTI-KICKBACK PROCEDURES	Jul-95	
52.203-8	CANCEL. & RECOVERY OF FUNDS FOR ILLEGAL OR IMPROPER ACTIVITY	Jan-97	
52.203-10	PRICE OR FEE ADJUSTMENT FOR ILLEGAL OR IMPROPER ACTIVITY	Jan-97	
52.203-12	LIMITATION ON PAYMENTS TO INFLUENCE CERTAIN FEDERAL TRANSACTIONS	Sep-07	
52.204-04	PRINTING/COPYING DOUBLE-SIDED ON RECYCLED PAPER	Aug-00	
52.204-07	CENTRAL CONTRACTOR REGISTRATION	Jul-06	Contractor Mandatory Internet Data Input
52.209-06	PROTECTING GOV. INTEREST WHEN SUBCONTRACTING W/ CONT. DEB. SUSP. OR PROP. FOR DEB.	Sep-06	
52.214-26	AUDIT AND RECORDS--SEALED BIDDING	Oct-97	
52.214-27	PRICE REDUCTION FOR DEFECT. COST OR PRICING DATA-MODIFICATIONS -SEALED BIDDING	Oct-97	
52.214-28	SUBCONTRACTOR COST OR PRICING DATA--MODIFICATIONS--SEALED BIDDING	Oct-97	
52.219-08	UTILIZATION OF SMALL BUSINESS CONCERNS	May-04	
52.219-09 ALT 1	SMALL BUSINESS SUBCONTRACTING PLAN (ALT 1 - (Oct 01))	Sep-07	Large Business Mandatory Submittal Requirement
52.219-14	LIMITATIONS ON SUBCONTRACTING	Dec-96	
52.219-16	LIQUIDATED DAMAGES - SUBCONTRACTING PLAN	Jan-99	
52.222-03	CONVICT LABOR	Jun-03	
52.222-04	CONTRACT WORK HOURS AND SAFETY STANDARDS ACT--OVERTIME COMPENSATION	Jul-05	
52.222-06	DAVIS-BACON ACT	Jul-05	Contractor Mandatory Wage Rates Posting
52.222-07	WITHHOLDING OF FUNDS	Feb-88	
52.222-08	PAYROLLS AND BASIC RECORDS	Feb-88	Contractor Weekly Payroll Submittals
52.222-09	APPRENTICES AND TRAINEES	Jul-05	
52.222-10	COMPLIANCE WITH COPELAND ACT REQUIREMENTS	Feb-88	
52.222-11	SUBCONTRACTS (LABOR STANDARDS)	Jul-05	
52.222-12	CONTRACT TERMINATION--DEBARMENT	Feb-88	
52.222-13	COMPLIANCE WITH DAVIS-BACON AND RELATED ACT REGULATIONS	Feb-88	
52.222-14	DISPUTES CONCERNING LABOR STANDARDS	Feb-88	
52.222-15	CERTIFICATION OF ELIGIBILITY	Feb-88	
52.222-21	PROHIBITION OF SEGREGATED FACILITIES	Feb-99	
52.222-26	EQUAL OPPORTUNITY	Mar-07	
52.222-27	AFFIRMATIVE ACTION COMPLIANCE REQUIREMENTS FOR CONSTRUCTION	Feb-99	
52.222-35	EQUAL OPPORTUNITY FOR SPECIAL DISABLED VETERANS, VETERANS OF THE VIETNAM ERA, & OTHER ELIGIBLE VETERANS.	Sep-06	

CONTRACT CLAUSES INDEX

FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)

(Updated thru FAC 2005-20 on 09/06/2007)

FAR & TAR CLAUSES INCORPORATED BY REFERENCE			
CLAUSE	TITLE	DATE	REMARKS
52.222-36	AFFIRMATIVE ACTION FOR WORKERS WITH DISABILITIES	Jun-98	
52.222-37	EMPLOYMENT. REPORTS ON SPECIAL DISABLED VETS, VETS OF THE VIETNAM ERA, ETAL.	Sep-06	Contractor Annual Mandatory Reporting Requirement
52.222-39	NOTIFICATION OF EMPLOYEE RIGHTS CONCERNING PAYMENT OF UNION DUES OR FEES	Dec-04	Contractor Mandatory Postings
52.223-05	POLLUTION PREVENTION AND RIGHT TO KNOW INFORMATION	Aug-03	
52.223-06	DRUG-FREE WORKPLACE	May-01	
52.223-14	TOXIC CHEMICAL RELEASE REPORTING	Aug-03	Contractor Annual Contractor Reporting Requirement
52.225-13	RESTRICTIONS ON CERTAIN FOREIGN PURCHASES	Feb-06	
52.227-01	AUTHORIZATION AND CONSENT	Jul-95	
52.227-02	NOTICE AND ASSISTANCE REGARDING PATENT AND COPYRIGHT INFRINGEMENT	Aug-96	
52.227-04	PATENT INDEMNITY-CONSTRUCTION CONTRACTS	Apr-84	
52.228-02	ADDITIONAL BOND SECURITY	Oct-97	
52.228-5	INSURANCE - WORK ON A GOVERNMENT INSTALLATION	Jan-97	Contractor Submittal Requirement
52.228-11	PLEDGES OF ASSETS	Feb-92	
52.228-12	PROSPECTIVE SUBCONTRACTOR REQUESTS FOR BONDS	Oct-95	
52.228-14	IRREVOCABLE LETTER OF CREDIT	Dec-99	
52.228-15	PERFORMANCE AND PAYMENT BONDS - CONSTRUCTION	Nov-06	Contractor Submittal Requirement
52.229-03	FEDERAL, STATE, AND LOCAL TAXES	Apr-03	
52.232-05	PAYMENTS UNDER FIXED-PRICE CONSTRUCTION CONTRACTS	Sep-02	Contractor Submittal Requirement
52.232-17	INTEREST	Jun-96	
52.232-23	ASSIGNMENT OF CLAIMS	Jan-86	
52.232-27	PROMPT PAYMENT FOR CONSTRUCTION CONTRACTS	Sep-05	
52.232-33	PAYMENT BY ELECTRONIC FUNDS TRANSFER - CENTRAL CONTRACTOR REGISTRATION	Oct-03	
52.233-01 ALT I	DISPUTES (Alt-I, Dec-91)	Jul-02	
52.233-03	PROTEST AFTER AWARD	Aug-96	
52.233-04	APPLICABLE LAW FOR BREACH OF CONTRACT CLAIM	Oct-04	
52.236-02	DIFFERING SITE CONDITIONS	Apr-84	
52.236-03	SITE INVESTIGATION AND CONDITIONS AFFECTING THE WORK	Apr-84	
52.236-05	MATERIAL AND WORKMANSHIP	Apr-84	
52.236-06	SUPERINTENDENCE BY THE CONTRACTOR	Apr-84	
52.236-07	PERMITS AND RESPONSIBILITIES	Nov-91	
52.236-08	OTHER CONTRACTS	Apr-84	
52.236-09	PROTECTION OF EXIST. VEGETATION., STRUCTURES., EQUIPMENT., UTILITIES, & IMPROVEMENTS	Apr-84	
52.236-10	OPERATIONS AND STORAGE AREAS	Apr-84	
52.236-11	USE AND POSSESSION PRIOR TO COMPLETION	Apr-84	
52.236-12	CLEANING UP	Apr-84	
52.236-13	ACCIDENT PREVENTION	Nov-91	

CONTRACT CLAUSES INDEX

FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)

(Updated thru FAC 2005-20 on 09/06/2007)

FAR & TAR CLAUSES INCORPORATED BY REFERENCE

CLAUSE	TITLE	DATE	REMARKS
52.236-15	SCHEDULES FOR CONSTRUCTION CONTRACTS	Apr-84	Contractor Submittal Requirement
52.236-17	LAYOUT OF WORK	Apr-84	
52.236-21	SPECIFICATIONS AND DRAWINGS FOR CONSTRUCTION	Feb-97	
52.236-26	PRECONSTRUCTION CONFERENCE	Feb-95	
52.242-13	BANKRUPTCY	Jul-95	
52.242-14	SUSPENSION OF WORK	Apr-84	
52.243-04	CHANGES	Jun-07	
52.244-06	SUBCONTRACTS FOR COMMERCIAL ITEMS	Mar-07	
52.245-02	GOVERNMENT PROPERTY (FIXED-PRICE CONTRACTS)	Jun -07	
52.246-12	INSPECTION OF CONSTRUCTION	Aug-96	
52.248-03 ALT I	VALUE ENGINEERING-CONSTRUCTION (Alt-I, Apr-84)	Sep-06	
52.249-01	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED PRICE)(SHORT FORM)	Apr-84	
52.249-02 ALT I	TERMINATION FOR CONVENIENCE OF THE GOVERNMENT (FIXED PRICE) (Alt-I, Sep-96)	May-04	
52.249-10	DEFAULT (FIXED PRICE CONSTRUCTION)	Apr-84	
52.253-01	COMPUTER GENERATED FORMS	Jan-91	

TAR CLAUSES INCORPORATED BY REFERENCE

CLAUSE	TITLE	DATE	REMARKS
1252.211-70	INDEX FOR SPECIFICATIONS	Apr-05	
1252.242-73	CONTRACTING OFFICERS TECHNICAL REPRESENTATIVE	Oct-94	

FAR & TAR PROVISIONS INCORPORATED BY REFERENCE

PROVISION	TITLE	DATE	REMARKS
52.217-03	EVALUATION EXCLUSIVE OF OPTION	Apr-84	
52.217-04	EVALUATION OF OPTIONS EXERCISED AT TIME OF CONTRACT AWARD	Jun-88	
52.217-05	EVALUATION OF OPTIONS	Jul-90	

CONTRACT CLAUSES INDEX

FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)

(Updated thru FAC 2005-20 on 09/06/2007)

FAR & TAR CLAUSES INCORPORATED BY FULL TEXT

CLAUSE	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
52.211-10	COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK	Apr-84	H	CONSTR. CONTRACT REQS.	Government Fill In
52.211-12	LIQUIDATED DAMAGES-CONSTRUCTION	Sep-00	H	CONSTR. CONTRACT REQS.	Government Fill In
52.211-18	VARIATION IN ESTIMATED QUANTITY	Apr-84	H	CONSTR. CONTRACT REQS	
52.219-4	NOTICE OF PRICE EVALUATION. PREFERENCE FOR HUBZONE SB CONCERNS	Jul-05	F	SOCIOECON PROG REQS	Contractor Fill-In
52.222-23	NOTICE OF REQ. FOR AFFIRMATIVE ACTION TO ENSURE E.E.O.	Feb-99	F	SOCIOECON PROG REQS	Contractor Reporting Requirements
52.223-03 ALT I	HAZARDOUS MAT. IDENT. & MATERIAL SAFETY DATA (Alt-I, Jul-95)	Jan-97	G	GEN'L CONTRACT REQS.	Contractor Submittal Requirements
52.223-09	EST. OF % OF REC. MAT. CONTENT FOR EPA DESIGN. PRODUCTS	Aug-00	G	GEN'L CONTRACT REQS	Contractor Reporting Requirement
52.225-09	BUY AMERICAN ACT-CONSTRUCTION MATERIALS	Jan 05	F	SOCIOECON PROG REQS	Government & Contractor Fill In's
52-236-01	PERFORMANCE OF WORK BY THE CONTRACTOR	Apr -84	H	CONSTR. CONTRACT REQS	Government Fill In
52.236-04	PHYSICAL DATA	Apr-84	H	CONSTR. CONTRACT REQS.	Government Fill In

TAR CLAUSES INCORPORATED BY FULL TEXT

CLAUSE	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
FAR PT 22.9	NONDISCRIMINATION BECAUSE OF AGE POLICY	Feb-64	F	SOCIOECON PROG REQS	Policy Statement - Not A Clause

(End of Clauses Index)

CONTRACT PROVISIONS INDEX

FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)

(Updated thru FAC 2005-20 on 09/06/2007)

52.252-1 Solicitation Provisions Incorporated by Reference (Feb 1998)

This solicitation incorporates one or more solicitation provisions by reference, with the same force and effect as if they were given in full text. Upon request, the Contracting Officer will make their full text available. The offeror is cautioned that the listed provisions may include blocks that must be completed by the offeror and submitted with its quotation or offer. In lieu of submitting the full text of those provisions, the offeror may identify the provision by paragraph identifier and provide the appropriate information with its quotation or offer. Also, the full text of a solicitation provision may be accessed electronically at this address: www.arnet.gov/far/

(End of Clause)

FAR & TAR PROVISIONS INCORPORATED BY REFERENCE

PROVISION	TITLE	DATE	REMARKS
52.211-06	BRAND NAME OR EQUAL	Aug-99	
52.214-03	AMENDMENTS TO INVITATIONS FOR BIDS	Dec-89	
52.214-04	FALSE STATEMENTS IN BIDS	Apr-84	
52.214-05	SUBMISSION OF BIDS	Mar-97	
52.214-06	EXPLANATION TO PROSPECTIVE BIDDERS	Apr-84	
52.214-07	LATE SUBMISSIONS, MODIFICATIONS, AND WITHDRAWALS OF BIDS	Nov-99	
52.214-18	PREPARATION OF BIDS--CONSTRUCTION	Apr-84	
52.214-19	CONTRACT AWARD--SEALED BIDDING--CONSTRUCTION	Aug-96	
52.225-10	NOTICE OF BUY AMERICAN ACT REQUIREMENT - CONSTRUCTION MATERIAL.	May-02	

TAR PROVISIONS INCORPORATED BY REFERENCE

PROVISION	TITLE	DATE	REMARKS

CONTRACT PROVISIONS INDEX

FEDERAL ACQUISITION REGULATION (FAR) & TRANSPORTATION ACQUISITION REGULATION (TAR)

(Updated thru FAC 2005-20 on 09/06/2007)

FAR PROVISIONS INCORPORATED BY FULL TEXT					
PROVISION	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
52.204-08	ANNUAL REPRESENTATIONS AND CERTIFICATIONS	Jan 06	D	REPS. & CERTIFICATIONS	Mandatory Contractor On-Line Input
52.211-04	AVAILABILITY FOR EXAM. OF SPECS NOT LISTED IN GSA INDEX OF FED SPECS/STANDARDS & COM. ITEM DESCRIPTION	Jun-88	E	INSTRUCTIONS TO BIDDERS	Government Fill In.
52.216-01	TYPE OF CONTRACT	Apr-84	E	INSTRUCTIONS TO BIDDERS	Government Fill In.
52.228-01	BID GUARANTEE	Sep-96	E	INSTRUCTIONS TO BIDDERS	Contractor Submittal Requirement
52.233-02	SERVICE OF PROTEST	Aug-96	E	INSTRUCTIONS TO BIDDERS	Government Fill In.
52.236-27	SITE VISIT (CONSTRUCTION)	Feb-95	E	CONSTR. CONTRACT REQS.	Government Fill In.
OTHER PROVISIONS INCORPORATED BY FULL TEXT					
PROVISION	TITLE	DATE	SECTION	SECTION TYPE	REMARKS
NONE					

(End of Provisions Index)

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION PROVISIONS

REPRESENTATIONS AND CERTIFICATIONS

Annual Representations and Certifications. Prospective contractors shall complete electronic annual representations and certifications on-line at this web address: <http://orca.bpn.gov> (See FAR 4.1201) in conjunction with required registration in the Central Contractor Registration (CCR) database (see FAR 4.1102).

Vets100 Form must also be filled-in online at <http://vets100.cudenver.edu/> in accordance with FAR Clause 52.222-37.

Contractors are not eligible for award without completing these requirements.

4.1201); except for the changes identified below [*offeror to insert changes, identifying change by clause number, title, date*]. These amended representation(s) and/or certification(s) are also incorporated in this offer and are current, accurate, and complete as of the date of this offer.

FAR Clause	Title	Date	Change

Any changes provided by the offeror are applicable to this solicitation only, and do not result in an update to the representations and certifications posted on ORCA.
(End of Provision)

52.204-8

52.204-8 – Annual Representations and Certifications.

As prescribed in 4.1202, insert the following provision:
Annual Representations and Certifications (Jan 2006)

(a)

(1) The North American Industry classification System (NAICS) code for this acquisition is 237310.

(2) The small business size standard is **\$31,000,000**.

(3) The small business size standard for a concern which submits an offer in its own name, other than on a construction or service contract, but which proposes to furnish a product which it did not itself manufacture, is 500 employees.

(b)

(1) If the clause at 52.204-7, Central Contractor Registration, is included in this solicitation, paragraph (c) of this provision applies.

(2) If the clause at 52.204-7 is not included in this solicitation, and the offeror is currently registered in CCR, and has completed the ORCA electronically, the offeror may choose to use paragraph (c) of this provision instead of completing the corresponding individual representations and certification in the solicitation. The offeror shall indicate which option applies by checking one of the following boxes:

☐ (i) Paragraph (c) applies.

☐ (ii) Paragraph (c) does not apply and the offeror has completed the individual representations and certifications in the solicitation.

(c) The offeror has completed the annual representations and certifications electronically via the Online Representations and Certifications Application (ORCA) website at <http://orca.bpn.gov>. After reviewing the ORCA database information, the offeror verifies by submission of the offer that the representations and certifications currently posted electronically have been entered or updated within the last 12 months, are current, accurate, complete, and applicable to this solicitation (including the business size standard applicable to the NAICS code referenced for this solicitation), as of the date of this offer and are incorporated in this offer by reference (see FAR

(End of Section D)

**FEDERAL ACQUISITION REGULATION &
TRANSPORTATION ACQUISITION REGULATION PROVISIONS
INSTRUCTIONS TO BIDDERS**

52.211-4

**AVAILABILITY FOR EXAMINATION OF
SPECIFICATIONS NOT LISTED IN THE GSA
INDEX OF FEDERAL SPECIFICATIONS,
STANDARDS AND COMMERCIAL ITEM
DESCRIPTIONS (JUN 1988)**

The specifications cited in this solicitation are not available for distribution. However, they may be examined at the following location(s):

**FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
21400 RIDGETOP CIRCLE
STERLING, VIRGINIA 20166-6511**

Send an email to the following address to make an appointment: **eflhd.contracts@fhwa.dot.gov**

TIME(S) FOR VIEWING: 8 A.M. TO 4 P.M.

All documents are available for direct download from the following website:
www.efl.fhwa.dot.gov/procurement/procurement.htm

(End of Provision)

52.216-1

TYPE OF CONTRACT (APR 1984)

The Government contemplates award of a **firm-fixed-price** contract resulting from this solicitation.

(End of Provision)

52.233-2

SERVICE OF PROTEST (AUG 1996)

(a) Protests, as defined in section 33.101 of the Federal Acquisition Regulation, that are filed directly with an agency, and copies of any protests that are filed with the General Accounting Office (GAO), shall be served on the Contracting Officer (addressed as follows) by obtaining written and dated acknowledgment of receipt from

**FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
21400 RIDGETOP CIRCLE
STERLING, VIRGINIA 20166-6511**

(b) The copy of any protest shall be received in the office designated above within one day of filing a protest with the GAO.

(End of Provision)

52.236-27

**Site Visit (Construction).
(Feb 1995)**

(a) The clauses at 52.236-2, Differing Site Conditions, and 52.236-3, Site Investigations and Conditions Affecting the Work, will be included in any contract awarded as a result of this solicitation. Accordingly, offerors or quoters are urged and expected to inspect the site where the work will be performed.

(b) **Site visits** may be arranged during normal duty hours by contacting:

Johnny Fleming, Civil Engineer

Ouachita National Forest

USDA Forest Service

100 Reserve Street

Federal Building

Hot Springs, AR 71902

Phone: 501-321-5309

Email: jfleming01@fs.fed.us

(End of Provision)

(End of Section E)

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-1

SOCIOECONOMIC PROGRAM REQUIREMENTS

52.219-4

Notice of Price Evaluation Preference for HUBZone Small Business Concerns.

(Oct 2004)

(a) *Definition.* HUBZone small business concern, as used in this clause, means a small business concern that appears on the List of Qualified HUBZone Small Business Concerns maintained by the Small Business Administration.

(b) *Evaluation preference.*

(1) Offers will be evaluated by adding a factor of 10 percent to the price of all offers, except—

(i) Offers from HUBZone small business concerns that have not waived the evaluation preference;

(ii) Otherwise successful offers from small business concerns;

(iii) Otherwise successful offers of eligible products under the Trade Agreements Act when the dollar threshold for application of the Act is exceeded (see 25.402 of the Federal Acquisition Regulation (FAR)); and

(iv) Otherwise successful offers where application of the factor would be inconsistent with a Memorandum of Understanding or other international agreement with a foreign government.

(2) The factor of 10 percent shall be applied on a line item basis or to any group of items on which award may be made. Other evaluation factors described in the solicitation shall be applied before application of the factor.

(3) A concern that is both a HUBZone small business concern and a small disadvantaged business concern will receive the benefit of both the HUBZone small business price evaluation preference and the small disadvantaged business price evaluation adjustment (see FAR clause 52.219-23). Each applicable price evaluation preference or adjustment shall be calculated independently against an offeror's base offer. These individual preference amounts shall be added together to arrive at the total evaluated price for that offer.

(c) *Waiver of evaluation preference.* A HUBZone small business concern may elect to waive the evaluation preference, in which case the factor will be added to its offer for evaluation purposes. The agreements in paragraph (d) of this clause do not apply if the offeror has waived the evaluation preference.

☐ Offer elects to waive the evaluation preference.

(d) *Agreement.* A HUBZone small business concern agrees that in the performance of the contract, in the case of a contract for

(1) Services (except construction), at least 50 percent of the cost of personnel for contract performance will be spent for employees of the concern or employees of other HUBZone small business concerns;

(2) Supplies (other than procurement from a non-manufacturer of such supplies), at least 50 percent of the cost of manufacturing, excluding the cost of materials, will be performed by the concern or other HUBZone small business concerns;

(3) General construction, at least 15 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns; or

(4) Construction by special trade contractors, at least 25 percent of the cost of the contract performance incurred for personnel will be spent on the concern's employees or the employees of other HUBZone small business concerns.

(e) A HUBZone joint venture agrees that in the performance of the contract, the applicable percentage specified in paragraph (d) of this clause will be performed by the HUBZone small business participant or participants;

(f) A HUBZone small business concern non-manufacturer agrees to furnish in performing this contract only end items manufactured or produced by HUBZone small business manufacturer concerns. This paragraph does not apply in connection with construction or service contracts.

(End of clause)

FAR SUBPART 22.9

NONDISCRIMINATION BECAUSE OF AGE (FEB 96)

22.901 Policy. Executive Order 11141, February 12, 1964 (29 CFR 2477), states that the Government policy is as follows:

(a) Contractors and subcontractors shall not, in connection with employment, advancement, or discharge of employees, or the terms, conditions, or privileges of their employment, discriminate against persons because of their age except upon the basis of a bona fide occupational qualification, retirement plan, or statutory requirement.

(b) Contractors and subcontractors, or persons acting on their behalf, shall not specify in solicitations or advertisements for employees to work on Government contracts, a maximum age limit for employment unless the specified maximum age limit is based upon a bona fide occupational qualification, retirement plan, or statutory requirement.

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-2

SOCIOECONOMIC PROGRAM REQUIREMENTS

(c) Agencies will bring this policy to the attention of contractors. The use of contract clauses is not required.
(End of Policy Statement)

52.222-23

Notice of Requirement for Affirmative Action to Ensure Equal Employment Opportunity for Construction (Feb 1999)

(a) The offeror's attention is called to the Equal Opportunity clause and the Affirmative Action Compliance Requirements for Construction clause of this solicitation.

(b) The goals for minority and female participation, expressed in percentage terms for the Contractor's aggregate workforce in each trade on all construction work in the covered area, are as follows:

Goals for Minority Participation for Each Trade	Goals for Female Participation for Each Trade
6.6%	6.9%

These goals are applicable to all the Contractor's construction work performed in the covered area. If the Contractor performs construction work in a geographical area located outside of the covered area, the Contractor shall apply the goals established for the geographical area where the work is actually performed. Goals are published periodically in the *Federal Register* in notice form, and these notices may be obtained from any Office of Federal Contract Compliance Programs office.

(c) The Contractor's compliance with Executive Order 11246, as amended, and the regulations in 41 CFR 60-4 shall be based on

(1) its implementation of the Equal Opportunity clause,

(2) specific affirmative action obligations required by the clause entitled "Affirmative Action Compliance Requirements for Construction," and

(3) its efforts to meet the goals.

The hours of minority and female employment and training must be substantially uniform throughout the length of the contract, and in each trade. The Contractor shall make a good faith effort to employ minorities and women evenly on each of its projects. The transfer of minority or female employees or trainees from Contractor to Contractor, or from project to project, for the sole purpose of meeting the Contractor's goals shall be a violation of the contract, Executive Order 11246, as amended, and the regulations in 41 CFR 60-4. Compliance with the goals will be measured against the total work hours performed.

(d) The Contractor shall provide written notification to the

Deputy Assistant Secretary for Federal Contract Compliance, U.S. Department of Labor, within 10 working days following award of any construction subcontract in excess of \$10,000 at any tier for construction work under the contract resulting from this solicitation. The notification shall list the --

(1) Name, address, and telephone number of the subcontractor;

(2) Employer's identification number of the subcontractor;

(3) Estimated dollar amount of the subcontract;

(4) Estimated starting and completion dates of the subcontract; and

(5) Geographical area in which the subcontract is to be performed.

(e) As used in this Notice, and in any contract resulting from this solicitation, the "covered area" is as follows:

Polk County, AR

(End of Provision)

52.225-9

Buy American Act-Construction Materials. (Jan 2005)

(a) *Definitions.* As used in this clause-

"Component" means an article, material, or supply incorporated directly into a construction material.

"Construction material" means an article, material, or supply brought to the construction site by the Contractor or a subcontractor for incorporation into the building or work. The term also includes an item brought to the site pre-assembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

"Cost of components" means-

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-3

SOCIOECONOMIC PROGRAM REQUIREMENTS

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

“Domestic construction material” means-

(1) An un-manufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which non-availability determinations have been made are treated as domestic.

“Foreign construction material” means a construction material other than a domestic construction material.

“United States” means the 50 States, the District of Columbia, and outlying areas.

(b) Domestic preference.

(1) This clause implements the Buy American Act (41 U.S.C. 10a - 10d) by providing a preference for domestic construction material. The Contractor shall use only domestic construction material in performing this contract, except as provided in paragraphs (b)(2) and (b)(3) of this clause.

(2) This requirement does not apply to the construction material or components listed by the Government as follows:

NONE

(3) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(2) of this clause if the Government determines that-

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the requirements of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act.

(1)

(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(3) of this clause shall include adequate information for Government evaluation of the request, including-

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier; and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(3)(i) of this clause.

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data*. To permit evaluation of requests under paragraph 2 of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-4

SOCIOECONOMIC PROGRAM REQUIREMENTS

Foreign and Domestic Construction Materials Price Comparison			
Construction Material Description	Unit of Measure	Quantity	Price (Dollars)*
Item 1:			
Foreign construction material			
Domestic construction material			
Item 2:			
Foreign construction material			
Domestic construction material			
[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.] [Include other applicable supporting information.] [* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]			

(End of Clause)

52.225-10 -- Notice of Buy American Act Requirement— Construction Materials.

As prescribed in [25.1102](#)(b)(1), insert the following provision:

Notice of Buy American Act Requirement--Construction Materials (May 2002)

(a) *Definitions.* “Construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act--Construction Materials” (Federal Acquisition Regulation (FAR) clause 52.225-9).

(b) *Requests for determinations of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9 in the request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) *Evaluation of offers.*

(1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction material, by adding to the offered price the appropriate percentage of the cost of such foreign

construction material, as specified in paragraph (b)(3)(i) of the clause at FAR 52.225-9.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) *Alternate offers.*

(1) When an offer includes foreign construction material not listed by the Government in this solicitation in paragraph (b)(2) of the clause at FAR 52.225-9, the offeror also may submit an alternate offer based on use of equivalent domestic construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of the clause at FAR 52.225-9 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of the clause at FAR 52.225-9 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic construction material, and the offeror shall be required to furnish such domestic construction material. An offer based on use of the foreign construction material for which an exception was requested—

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

Alternate I (May 2002). As prescribed in [25.1102](#)(b)(2), substitute the following paragraph (b) for paragraph (b) of the basic provision:

(b) *Requests for determinations of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act shall submit the request with its offer, including the information and applicable supporting data required by paragraphs (c) and (d) of the clause at FAR 52.225-9.

52.225-11

Buy American Act—Construction Materials under Trade Agreements. (Nov 2006)

(a) *Definitions.* As used in this clause--

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-5

SOCIOECONOMIC PROGRAM REQUIREMENTS

“Caribbean Basin country construction material” means a construction material that--

(1) Is wholly the growth, product, or manufacture of a Caribbean Basin country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a Caribbean Basin country into a new and different construction material distinct from the materials from which it was transformed.

“Component” means an article, material, or supply incorporated directly into a construction material.

“Construction material” means an article, material, or supply brought to the construction site by the Contractor or subcontractor for incorporation into the building or work. The term also includes an item brought to the site preassembled from articles, materials, or supplies. However, emergency life safety systems, such as emergency lighting, fire alarm, and audio evacuation systems, that are discrete systems incorporated into a public building or work and that are produced as complete systems, are evaluated as a single and distinct construction material regardless of when or how the individual parts or components of those systems are delivered to the construction site. Materials purchased directly by the Government are supplies, not construction material.

“Cost of components” means--

(1) For components purchased by the Contractor, the acquisition cost, including transportation costs to the place of incorporation into the construction material (whether or not such costs are paid to a domestic firm), and any applicable duty (whether or not a duty-free entry certificate is issued); or

(2) For components manufactured by the Contractor, all costs associated with the manufacture of the component, including transportation costs as described in paragraph (1) of this definition, plus allocable overhead costs, but excluding profit. Cost of components does not include any costs associated with the manufacture of the construction material.

“Designated country” means any of the following countries:

(1) A World Trade Organization Government Procurement Agreement country (Aruba, Austria, Belgium, Canada, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong, Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea (Republic of), Latvia, Liechtenstein, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, or United Kingdom);

(2) A Free Trade Agreement country (Australia, Bahrain, Canada, Chile, El Salvador, Guatemala, Honduras, Mexico, Morocco, Nicaragua, or Singapore);

(3) A least developed country (Afghanistan, Angola, Bangladesh, Benin, Bhutan, Burkina Faso, Burundi, Cambodia, Cape Verde, Central African Republic, Chad, Comoros, Democratic Republic of Congo, Djibouti, East Timor, Equatorial Guinea, Eritrea, Ethiopia, Gambia, Guinea, Guinea-Bissau, Haiti, Kiribati, Laos, Lesotho, Madagascar, Malawi, Maldives, Mali, Mauritania, Mozambique, Nepal, Niger, Rwanda, Samoa, Sao Tome and Principe, Senegal, Sierra Leone, Solomon Islands, Somalia, Tanzania, Togo, Tuvalu, Uganda, Vanuatu, Yemen, or Zambia); or

(4) A Caribbean Basin country (Antigua and Barbuda, Aruba, Bahamas, Barbados, Belize, British Virgin Islands, Costa Rica, Dominica, Dominican Republic, Grenada, Guyana, Haiti, Jamaica, Montserrat, Netherlands Antilles, St. Kitts and Nevis, St. Lucia, St. Vincent and the Grenadines, or Trinidad and Tobago).

“Designated country construction material” means a construction material that is a WTO GPA country construction material, an FTA country construction material, a least developed country construction material, or a Caribbean Basin country construction material.

“Domestic construction material” means--

(1) An unmanufactured construction material mined or produced in the United States; or

(2) A construction material manufactured in the United States, if the cost of its components mined, produced, or manufactured in the United States exceeds 50 percent of the cost of all its components. Components of foreign origin of the same class or kind for which nonavailability determinations have been made are treated as domestic.

“Free Trade Agreement country construction material means” a construction material that--

(1) Is wholly the growth, product, or manufacture of a Free Trade Agreement (FTA) country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a FTA country into a new and different construction material distinct from the materials from which it was transformed.

“Foreign construction material” means a construction material other than a domestic construction material.

“Least developed country construction material” means a construction material that--

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-6

SOCIOECONOMIC PROGRAM REQUIREMENTS

(1) Is wholly the growth, product, or manufacture of a least developed country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a least developed country into a new and different construction material distinct from the materials from which it was transformed.

“United States” means the 50 States, the District of Columbia, and outlying areas.

“WTO GPA country construction material” means a construction material that--

(1) Is wholly the growth, product, or manufacture of a WTO GPA country; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in a WTO GPA country into a new and different construction material distinct from the materials from which it was transformed.

(b) *Construction materials.*

(1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the WTO GPA and Free Trade Agreements (FTAs) apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country construction materials.

(2) The Contractor shall use only domestic or designated country construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

(3) The requirement in paragraph (b)(2) of this clause does not apply to the construction materials or components listed by the Government as follows: **NONE**.

(4) The Contracting Officer may add other foreign construction material to the list in paragraph (b)(3) of this clause if the Government determines that--

(i) The cost of domestic construction material would be unreasonable. The cost of a particular domestic construction material subject to the restrictions of the Buy American Act is unreasonable when the cost of such material exceeds the cost of foreign material by more than 6 percent;

(ii) The application of the restriction of the Buy American Act to a particular construction material would be impracticable or inconsistent with the public interest; or

(iii) The construction material is not mined, produced, or manufactured in the United States in sufficient

and reasonably available commercial quantities of a satisfactory quality.

(c) Request for determination of inapplicability of the Buy American Act.

(1)

(i) Any Contractor request to use foreign construction material in accordance with paragraph (b)(4) of this clause shall include adequate information for Government evaluation of the request, including--

(A) A description of the foreign and domestic construction materials;

(B) Unit of measure;

(C) Quantity;

(D) Price;

(E) Time of delivery or availability;

(F) Location of the construction project;

(G) Name and address of the proposed supplier;

and

(H) A detailed justification of the reason for use of foreign construction materials cited in accordance with paragraph (b)(3) of this clause.

(ii) A request based on unreasonable cost shall include a reasonable survey of the market and a completed price comparison table in the format in paragraph (d) of this clause.

(iii) The price of construction material shall include all delivery costs to the construction site and any applicable duty (whether or not a duty-free certificate may be issued).

(iv) Any Contractor request for a determination submitted after contract award shall explain why the Contractor could not reasonably foresee the need for such determination and could not have requested the determination before contract award. If the Contractor does not submit a satisfactory explanation, the Contracting Officer need not make a determination.

(2) If the Government determines after contract award that an exception to the Buy American Act applies and the Contracting Officer and the Contractor negotiate adequate consideration, the Contracting Officer will modify the contract to allow use of the foreign construction material. However, when the basis for the exception is the unreasonable price of a domestic construction material, adequate consideration is not less than the differential established in paragraph (b)(4)(i) of this clause.

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-7

SOCIOECONOMIC PROGRAM REQUIREMENTS

(3) Unless the Government determines that an exception to the Buy American Act applies, use of foreign construction material is noncompliant with the Buy American Act.

(d) *Data.* To permit evaluation of requests under paragraph (c) of this clause based on unreasonable cost, the Contractor shall include the following information and any applicable supporting data based on the survey of suppliers:

Foreign and Domestic Construction Materials Price Comparison

Construction material description	Unit of measure	Quantity	Price (dollars) *
<i>Item 1</i>			
Foreign construction material			
Domestic construction material			
<i>Item 2</i>			
Foreign construction material			
Domestic construction material			

[List name, address, telephone number, and contact for suppliers surveyed. Attach copy of response; if oral, attach summary.]

[Include other applicable supporting information.]

[* Include all delivery costs to the construction site and any applicable duty (whether or not a duty-free entry certificate is issued).]

(End of clause)

Alternate I (Nov 2006). As prescribed in [25.1102\(c\)\(3\)](#), add the following definitions of “Bahrainian construction material” and “Mexican construction material” to paragraph (a) of the basic clause, and substitute the following paragraphs (b)(1) and (b)(2) for paragraphs (b)(1) and (b)(2) of the basic clause:

“Bahrainian construction material” means a construction material that—

(1) Is wholly the growth, product, or manufacture of Bahrain; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in Bahrain into a new and different construction material distinct from the materials from which it was transformed.

“Mexican construction material” means a construction material that—

(1) Is wholly the growth, product, or manufacture of Mexico; or

(2) In the case of a construction material that consists in whole or in part of materials from another country, has been substantially transformed in Mexico into a new and different construction material distinct from the materials from which it was transformed.

(b) *Construction materials.*

(1) This clause implements the Buy American Act (41 U.S.C. 10a-10d) by providing a preference for domestic construction material. In addition, the Contracting Officer has determined that the WTO GPA and all the Free Trade Agreements except NAFTA apply to this acquisition. Therefore, the Buy American Act restrictions are waived for designated country construction materials other than Bahrainian or Mexican construction materials.

(2) The Contractor shall use only domestic, or designated country construction material other than Bahrainian or Mexican construction material in performing this contract, except as provided in paragraphs (b)(3) and (b)(4) of this clause.

52.225-12

Notice of Buy American Act Requirement— Construction Materials Under Trade Agreements. (Jan 2005)

(a) *Definitions.* “Construction material,” “designated country construction material,” “domestic construction material,” and “foreign construction material,” as used in this provision, are defined in the clause of this solicitation entitled “Buy American Act--Construction Materials Under Trade Agreements” (Federal Acquisition Regulation (FAR) clause 52.225-11).

(b) *Requests for determination of inapplicability.* An offeror requesting a determination regarding the inapplicability of the Buy American Act should submit the request to the Contracting Officer in time to allow a determination before submission of offers. The offeror shall include the information and applicable supporting data required by paragraphs (c) and (d) of FAR clause 52.225-11 in the

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

F-8

SOCIOECONOMIC PROGRAM REQUIREMENTS

request. If an offeror has not requested a determination regarding the inapplicability of the Buy American Act before submitting its offer, or has not received a response to a previous request, the offeror shall include the information and supporting data in the offer.

(c) Evaluation of offers.

(1) The Government will evaluate an offer requesting exception to the requirements of the Buy American Act, based on claimed unreasonable cost of domestic construction materials, by adding to the offered price the appropriate percentage of the cost of such foreign construction material, as specified in paragraph (b)(4)(i) of FAR clause 52.225-11.

(2) If evaluation results in a tie between an offeror that requested the substitution of foreign construction material based on unreasonable cost and an offeror that did not request an exception, the Contracting Officer will award to the offeror that did not request an exception based on unreasonable cost.

(d) Alternate offers.

(1) When an offer includes foreign construction material, other than designated country construction material, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material, and the offeror shall be required to furnish such domestic or designated country construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of provision)

Alternate II (Nov 2006). As prescribed in [25.1102](#)(d)(3), add the definitions of "Bahrainian construction material" and

"Mexican construction material" to paragraph (a) and substitute the following paragraph (d) for paragraph (d) of the basic provision:

(d) Alternate offers.

(1) When an offer includes foreign construction material, except foreign construction material from a designated country other than Bahrain or Mexico, that is not listed by the Government in this solicitation in paragraph (b)(3) of FAR clause 52.225-11, the offeror also may submit an alternate offer based on use of equivalent domestic or designated country construction material other than Bahrainian or Mexican construction material.

(2) If an alternate offer is submitted, the offeror shall submit a separate Standard Form 1442 for the alternate offer, and a separate price comparison table prepared in accordance with paragraphs (c) and (d) of FAR clause 52.225-11 for the offer that is based on the use of any foreign construction material for which the Government has not yet determined an exception applies.

(3) If the Government determines that a particular exception requested in accordance with paragraph (c) of FAR clause 52.225-11 does not apply, the Government will evaluate only those offers based on use of the equivalent domestic or designated country construction material other than Bahrainian or Mexican construction material. An offer based on use of the foreign construction material for which an exception was requested--

(i) Will be rejected as nonresponsive if this acquisition is conducted by sealed bidding; or

(ii) May be accepted if revised during negotiations.

(End of Section F)

MINIMUM WAGE SCHEDULE

U.S. Department of Labor
Employment Standards Administration
Wage and Hour Division

GENERAL DECISION: **AR20080007** 02/08/2008 AR7

Date: February 8, 2008

General Decision Number: **AR20080007** 02/08/2008

Superseded General Decision Number: AR20070007

State: Arkansas

Construction Type: Highway

Counties: Arkansas Statewide.

CONSTRUCTION, ALTERATION, AND/OR REPAIR OF STREETS, HIGHWAYS,
AND RUNWAY PROJECTS (does not include structures on highway
rest areas)

Modification Number	Publication Date
0	02/08/2008

* SUAR1990-003 01/19/1990

	Rates	Fringes
Bricklayer.....	\$ 7.20	
Carpenter.....	\$ 7.20	
Concrete Finisher.....	\$ 7.20	
Electrician.....	\$ 8.75	
Ironworker, Reinforcing.....	\$ 5.85	
Ironworker, Structural.....	\$ 6.30	
 Laborers:		
Air tool.....	\$ 5.85	
Asphalt heater.....	\$ 5.85	
Asphalt raker.....	\$ 5.85	
Chain saw.....	\$ 5.85	
Checker grader.....	\$ 5.85	
Concrete joint sealer.....	\$ 5.85	
Concrete saw.....	\$ 5.85	
Formsetter.....	\$ 5.85	
General.....	\$ 5.85	
Pipelayer.....	\$ 5.85	
Powderman.....	\$ 6.40	

Vibratorman.....	\$ 5.85
Painter.....	\$ 6.20
Pile Driver Leadmen.....	\$ 6.20
Power equipment operators:	
Aggregate spreader.....	\$ 5.85
Asphalt plant fireman.....	\$ 5.85
Asphalt plantdriver.....	\$ 5.85
Backhoe, rubber tired 1 yard or less.....	\$ 6.10
Batch plant.....	\$ 5.85
Bull float.....	\$ 5.85
Bulldozer, Finish.....	\$ 6.90
Bulldozer, Rough.....	\$ 5.85
Cherry picker.....	\$ 6.10
Concrete curing machine.....	\$ 5.85
Concrete mixer, 5 sacks & over.....	\$ 6.20
Concrete mixer, less than 5 sacks.....	\$ 5.85
Concrete paver.....	\$ 6.70
Concrete spreader.....	\$ 6.70
Crane, derrick, dragline, shovel & backhoe 1-1/2 yards or less.....	\$ 6.70
Crane, derrick, dragline, shovel & backhoe over 1- 1/2 yards.....	\$ 7.20
Crusher.....	\$ 5.85
Distributor.....	\$ 5.85
Drill, wagon or truck.....	\$ 5.85
Elevating grader.....	\$ 6.70
Euclid or like equipment, bottom or end dump.....	\$ 5.85
Finishing machine.....	\$ 6.10
Flagger.....	\$ 5.85
Forklift.....	\$ 5.85
Form grader.....	\$ 5.85
Front end loader, Finish....	\$ 6.70
Front end loader, Rough....	\$ 5.85
Hydro seeder.....	\$ 5.85
Mechanic.....	\$ 6.90
Motor patrol, Finish.....	\$ 6.90
Motor patrol, Rough.....	\$ 5.85
Mulching machine.....	\$ 5.85
Oiler & greaser.....	\$ 5.85
Piledriver.....	\$ 6.20
Power broom.....	\$ 5.85
Pug mill.....	\$ 5.85
Roller, self propelled.....	\$ 5.85
Scraper, Finish.....	\$ 6.90
Scraper, Rough.....	\$ 5.85
Sod slicing machine.....	\$ 5.85

Stabilizer mixing machine...\$	5.85
Tractor, crawler type.....\$	5.85
Tractor, farm & sheel.....\$	5.85
Tractor, wheel type with attachment 1 yd. or under...\$	5.85
Trenching machine.....\$	5.85
Stonemason.....\$	7.20
Truck drivers:	
Distributor.....\$	5.85
Heavy-maximum pay load in excess of 3,000 lbs.....\$	5.85
Light-maximum pay load 3,000 lbs.....\$	5.85
Lowboy.....\$	5.85
Semi-trailer.....\$	5.85
Transit mix.....\$	5.85
Well Driller.....\$	6.90

WELDERS - Receive rate prescribed for craft performing
operation to which welding is incidental.

=====

Unlisted classifications needed for work not included within
the scope of the classifications listed may be added after
award only as provided in the labor standards contract clauses
(29CFR 5.5 (a) (1) (ii)).

In the listing above, the "SU" designation means that rates
listed under the identifier do not reflect collectively
bargained wage and fringe benefit rates. Other designations
indicate unions whose rates have been determined to be
prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can
be:

- * an existing published wage determination
- * a survey underlying a wage determination
- * a Wage and Hour Division letter setting forth a position on
a wage determination matter
- * a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests
for summaries of surveys, should be with the Wage and Hour
Regional Office for the area in which the survey was conducted

because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

4.) All decisions by the Administrative Review Board are final.

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END OF GENERAL DECISION

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

GENERAL CONTRACT REQUIREMENTS

52.223-3

Hazardous Material Identification and Material Safety Data. (Jan 1997) Alt I (Jul 1995)

(a) "Hazardous material," as used in this clause, includes any material defined as hazardous under the latest version of Federal Standard No. 313 (including revisions adopted during the term of the contract).

(b) The offeror must list any hazardous material, as defined in paragraph (a) of this clause, to be delivered under this contract. The hazardous material shall be properly identified and include any applicable identification number, such as National Stock Number or Special Item Number. This information shall also be included on the Material Safety Data Sheet submitted under this contract.

Material (If none, insert "None")	Identification No.
None	

(c) This list must be updated during performance of the contract whenever the Contractor determines that any other material to be delivered under this contract is hazardous.

(d) The apparently successful offeror agrees to submit, for each item as required prior to award, a Material Safety Data Sheet, meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous material identified in paragraph (b) of this clause. Data shall be submitted in accordance with Federal Standard No. 313, whether or not the apparently successful offeror is the actual manufacturer of these items. Failure to submit the Material Safety Data Sheet prior to award may result in the apparently successful offeror being considered non-responsible and ineligible for award.

(e) If, after award, there is a change in the composition of the item(s) or a revision to Federal Standard No. 313, which renders incomplete or inaccurate the data submitted under paragraph (d) of this clause, the Contractor shall promptly notify the Contracting Officer and resubmit the data.

(f) Neither the requirements of this clause nor any act or failure to act by the Government shall relieve the Contractor of any responsibility or liability for the safety of Government, Contractor, or subcontractor personnel or property.

(g) Nothing contained in this clause shall relieve the Contractor from complying with applicable Federal, State, and local laws, codes, ordinances, and regulations

(including the obtaining of licenses and permits) in connection with hazardous material.

(h) The Government's rights in data furnished under this contract with respect to hazardous material are as follows:

(1) To use, duplicate and disclose any data to which this clause is applicable. The purposes of this right are to-

(i) Apprise personnel of the hazards to which they may be exposed in using, handling, packaging, transporting, or disposing of hazardous materials;

(ii) Obtain medical treatment for those affected by the material; and

(iii) Have others use, duplicate, and disclose the data for the Government for these purposes.

(2) To use, duplicate, and disclose data furnished under this clause, in accordance with paragraph (h)(1) of this clause, in precedence over any other clause of this contract providing for rights in data.

(3) The Government is not precluded from using similar or identical data acquired from other sources.

(i) Except as provided in paragraph (i)(2), the Contractor shall prepare and submit a sufficient number of Material Safety Data Sheets (MSDS's), meeting the requirements of 29 CFR 1910.1200(g) and the latest version of Federal Standard No. 313, for all hazardous materials identified in paragraph (b) of this clause.

(1) For items shipped to consignees, the Contractor shall include a copy of the MSDS's with the packing list or other suitable shipping document, which accompanies each shipment. Alternatively, the Contractor is permitted to transmit MSDS's to consignees in advance of receipt of shipments by consignees, if authorized in writing by the Contracting Officer.

(2) For items shipped to consignees identified by mailing address as agency depots, distribution centers or customer supply centers, the Contractor shall provide one copy of the MSDS's in or on each shipping container. If affixed to the outside of each container, the MSDS's must be placed in a weather resistant envelope.

(End of Clause)

52.223-9

**Estimate of Percentage of Recovered Material Content
for EPA-Designated Products.
(AUG 2000)**

(a) *Definitions.* As used in this clause— “Post consumer material” means a material or finished product that has served its intended use and has been discarded for disposal or recovery, having completed its life as a consumer item. Post consumer material is a part of the broader category of “recovered material.” “Recovered material” means waste materials and by-products recovered or diverted from solid waste, but the term does not include those materials and by-products generated from, and commonly reused within, an original manufacturing process.

(b) The Contractor, on completion of this contract, shall—

(1) Estimate the percentage of the total recovered material used in contract performance, including, if applicable, the percentage of post consumer material content; and

(2) Submit this estimate to:

**Contracting Officer
Eastern Federal Lands Highway Division
21400 Ridgetop Circle
Sterling, VA 20166.**

(End of Clause)

52.228-15

**Performance and Payment Bonds -- Construction
(Nov 2006)**

(a) *Definitions.* As used in this clause --

“Original contract price” means the award price of the contract; or, for requirements contracts, the price payable for the estimated total quantity; or, for indefinite-quantity contracts, the price payable for the specified minimum quantity. Original contract price does not include the price of any options, except those options exercised at the time of contract award.

(b) *Amount of required bonds.* Unless the resulting contract price is \$100,000 or less, the successful offeror shall furnish performance and payment bonds to the Contracting Officer as follows:

(1) *Performance Bonds (Standard Form 25).* The penal amount of performance bonds at the time of contract award shall be 100 percent of the original contract price.

(2) *Payment Bonds (Standard Form 25-A).* The penal amount of payment bonds at the time of contract award shall be 100 percent of the original contract price.

(3) *Additional bond protection.*

(i) The Government may require additional performance and payment bond protection if the contract price is increased. The increase in protection generally will equal 100 percent of the increase in contract price.

(ii) The Government may secure the additional protection by directing the Contractor to increase the penal amount of the existing bond or to obtain an additional bond.

(c) *Furnishing executed bonds.* The Contractor shall furnish all executed bonds, including any necessary reinsurance agreements, to the Contracting Officer, within the time period specified in the Bid Guarantee provision of the solicitation, or otherwise specified by the Contracting Officer, but in any event, before starting work.

(d) *Surety or other security for bonds.* The bonds shall be in the form of firm commitment, supported by corporate sureties whose names appear on the list contained in Treasury Department Circular 570, individual sureties, or by other acceptable security such as postal money order, certified check, cashier’s check, irrevocable letter of credit, or, in accordance with Treasury Department regulations, certain bonds or notes of the United States. Treasury Circular 570 is published in the *Federal Register* or may be obtained from the:

U.S. Department of Treasury
Financial Management Service
Surety Bond Branch
3700 East West Highway, Room 6F01
Hyattsville, MD 20782
Or via the internet at
<http://www.fms.treas.gov/c570/> .

(e) *Notice of subcontractor waiver of protection (40 U.S.C. 3133(c)).* Any waiver of the right to sue on the payment bond is void unless it is in writing, signed by the person whose right is waived, and executed after such person has first furnished labor or material for use in the performance of the contract.

(End of Clause)

52.248-3

**Value Engineering – Construction.
(Feb 2000)**

(a) *General.* The Contractor is encouraged to develop, prepare, and submit value engineering change proposals (VECP’s) voluntarily. The Contractor shall share in any instant contract savings realized from accepted VECP’s, in accordance with paragraph (f) below.

(b) *Definitions.* “Collateral costs,” as used in this clause, means agency costs of operation, maintenance, logistic support, or Government-furnished property.

“Collateral savings,” as used in this clause, means those measurable net reductions resulting from a VECP in the

agency's overall projected collateral costs, exclusive of acquisition savings, whether or not the acquisition cost changes.

"Contractor's development and implementation costs," as used in this clause, means those costs the Contractor incurs on a VECP specifically in developing, testing, preparing, and submitting the VECP, as well as those costs the Contractor incurs to make the contractual changes required by Government acceptance of a VECP.

"Government costs," as used in this clause, means those agency costs that result directly from developing and implementing the VECP, such as any net increases in the cost of testing, operations, maintenance, and logistic support. The term does not include the normal administrative costs of processing the VECP.

"Instant contract savings," as used in this clause, means the estimated reduction in Contractor cost of performance resulting from acceptance of the VECP, minus allowable Contractor's development and implementation costs, including subcontractors' development and implementation costs (see paragraph (h) below).

"Value engineering change proposal (VECP)" means a proposal that --

(1) Requires a change to this, the instant contract, to implement; and

(2) Results in reducing the contract price or estimated cost without impairing essential functions or characteristics; provided, that it does not involve a change-

- (i) In deliverable end item quantities only; or
- (ii) To the contract type only.

(c) *VECP preparation.* As a minimum, the Contractor shall include in each VECP the information described in subparagraphs (c)(1) through (7) below. If the proposed change is affected by contractually required configuration management or similar procedures, the instructions in those procedures relating to format, identification, and priority assignment shall govern VECP preparation. The VECP shall include the following:

(1) A description of the difference between the existing contract requirement and that proposed, the comparative advantages and disadvantages of each, a justification when an item's function or characteristics are being altered, and the effect of the change on the end item's performance.

(2) A list and analysis of the contract requirements that must be changed if the VECP is accepted, including any suggested specification revisions.

(3) A separate, detailed cost estimate for

(i) the affected portions of the existing contract requirement and

(ii) the VECP.

The cost reduction associated with the VECP shall take into account the Contractor's allowable development and implementation costs, including any amount attributable to subcontracts under paragraph (h) below.

(4) A description and estimate of costs the Government may incur in implementing the VECP, such as test and evaluation and operating and support costs.

(5) A prediction of any effects the proposed change would have on collateral costs to the agency.

(6) A statement of the time by which a contract modification accepting the VECP must be issued in order to achieve the maximum cost reduction, noting any effect on the contract completion time or delivery schedule.

(7) Identification of any previous submissions of the VECP, including the dates submitted, the agencies and contract numbers involved, and previous Government actions, if known.

(d) *Submission.* The Contractor shall submit VECP's to the Resident Engineer at the worksite, with a copy to the Contracting Officer.

(e) *Government action.*

(1) The Contracting Officer will notify the Contractor of the status of the VECP within 45 calendar days after the contracting office receives it. If additional time is required, the Contracting Officer will notify the Contractor within the 45-day period and provide the reason for the delay and the expected date of the decision. The Government will process VECP's expeditiously; however, it will not be liable for any delay in acting upon a VECP.

(2) If the VECP is not accepted, the Contracting Officer will notify the Contractor in writing, explaining the reasons for rejection. The Contractor may withdraw any VECP, in whole or in part, at any time before it is accepted by the Government. The Contracting Officer may require that the Contractor provide written notification before undertaking significant expenditures for VECP effort.

(3) Any VECP may be accepted, in whole or in part, by the Contracting Officer's award of a modification to this contract citing this clause. The Contracting Officer may accept the VECP, even though an agreement on price reduction has not been reached, by issuing the Contractor a notice to proceed with the change. Until a notice to proceed is issued or a contract modification applies a VECP to this contract, the Contractor shall perform in accordance with the existing contract. The decision to accept or reject all or part of any VECP is a unilateral

decision made solely at the discretion of the Contracting Officer.

(f) *Sharing* --

(1) *Rates*. The Government's share of savings is determined by subtracting Government costs from instant contract savings and multiplying the result by --

- (i) 45 percent for fixed-price contracts; or
- (ii) 75 percent for cost-reimbursement contracts.

(2) *Payment*. Payment of any share due the Contractor for use of a VECP on this contract shall be authorized by a modification to this contract to --

- (i) Accept the VECP;
- (ii) Reduce the contract price or estimated cost by the amount of instant contract savings; and
- (iii) Provide the Contractor's share of savings by adding the amount calculated to the contract price or fee.

(g) *Collateral savings*. If a VECP is accepted, the Contracting Officer will increase the instant contract amount by 20 percent of any projected collateral savings determined to be realized in a typical year of use after subtracting any Government costs not previously offset. However, the Contractor's share of collateral savings will not exceed the contract's firm-fixed-price or estimated cost, at the time the VECP is accepted, or \$100,000, whichever is greater. The Contracting Officer is the sole determiner of the amount of collateral savings.

(h) *Subcontracts*. The Contractor shall include an appropriate value engineering clause in any subcontract of \$50,000 or more and may include one in subcontracts of lesser value. In computing any adjustment in this contract's price under paragraph (f) above, the Contractor's allowable development and implementation costs shall include any subcontractor's allowable development and implementation costs clearly resulting from a VECP accepted by the Government under this contract, but shall exclude any value engineering incentive payments to a subcontractor. The Contractor may choose any arrangement for subcontractor value engineering incentive payments; *provided*, that these payments shall not reduce the Government's share of the savings resulting from the VECP.

(i) *Data*. The Contractor may restrict the Government's right to use any part of a VECP or the supporting data by marking the following legend on the affected parts:

These data, furnished under the Value Engineering -- Construction clause of contract DTFH71-08-C-000XX, shall not be disclosed outside the Government or duplicated, used, or disclosed, in whole or in part, for any purpose other than to evaluate a value engineering change proposal submitted under the clause. This restriction does not limit the Government's right to use information

contained in these data if it has been obtained or is otherwise available from the Contractor or from another source without limitations.

(End of Section G)

FEDERAL ACQUISITION REGULATION AND TRANSPORTATION ACQUISITION REGULATION CLAUSES

CONSTRUCTION CONTRACT REQUIREMENTS

52.211-10 COMMENCEMENT, PROSECUTION, AND COMPLETION OF WORK (APR 1984)

The Contractor shall be required to (a) commence work under this contract within (**SEE SF 1442, BLOCK 11 FOR NUMBER OF DAYS**) calendar days after the date the Contractor receives the notice to proceed, (b) prosecute the work diligently, and (c) complete the entire work ready for use not later than (**THE TIME INDICATED IN THE CONTINUATION OF THE SF 1442, BLOCK 11**). The time stated for completion shall include final cleanup of the premises. **(End of Clause)**

52.211-12 LIQUIDATED DAMAGES--CONSTRUCTION (SEPT 2000)

(a) If the Contractor fails to complete the work within the time specified in the contract, the Contractor shall pay liquidated damages to the Government in the amount of (**SEE SUBSECTION 108.04 OF THE FP-96/FP-03 AND/OR SPECIAL CONTRACT REQUIREMENTS FOR AMOUNT**) for each calendar day of delay until the work is completed or accepted.

(b) If the Government terminates the Contractor's right to proceed, liquidated damages will continue to accrue until the work is completed. These liquidated damages are in addition to excess costs of repurchase under the Termination clause. **(End of Clause)**

52.211-18 -- Variation in Estimated Quantity.

As prescribed in [11.703\(c\)](#), insert the following clause in solicitations and contracts when a fixed-price construction contract is contemplated that authorizes a variation in the estimated quantity of unit-priced items:

Variation in Estimated Quantity (Apr 1984)

If the quantity of a unit-priced item in this contract is an estimated quantity and the actual quantity of the unit-priced item varies more than 15 percent above or below the estimated quantity, an equitable adjustment in the contract price shall be made upon demand of either party. The equitable adjustment shall be based upon any increase or decrease in costs due solely to the variation above 115 percent or below 85 percent of the estimated quantity. If the quantity variation is such as to cause an increase in the time necessary for completion, the Contractor may request, in writing, an extension of time, to be received by the Contracting Officer within 10 days from the beginning of the delay, or within such further period as may be granted by the Contracting Officer before the date of final settlement of the contract. Upon the receipt of a written request for an

extension, the Contracting Officer shall ascertain the facts and make an adjustment for extending the completion date as, in the judgement of the Contracting Officer, is justified. **(End of Clause)**

52.236-1 PERFORMANCE OF WORK BY THE CONTRACTOR. (Apr 1984)

The Contractor shall perform on the site, and with its own organization, work equivalent to at least **50** percent of the total amount of work to be performed under the contract. This percentage may be reduced by a supplemental agreement to this contract if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the Government. **(End of Clause)**

52.236-4 PHYSICAL DATA (APR 1984)

Data and information furnished or referred to below is for the Contractor's information. The Government shall not be responsible for any interpretation of or conclusion drawn from the data or information by the Contractor.

(a) The indications of physical conditions on the drawings and in the specifications are the result of site investigations (**SEE CONTINUATION OF SF 1442, BLOCK 9**).

(b) Weather conditions: **CONTACT LOCAL OFFICE OF NATIONAL WEATHER SERVICE, U.S. DEPARTMENT OF COMMERCE.**

(c) Transportation facilities: **N/A**

(d) Other Information: **SEE CONTINUATION OF SF 1442, BLOCK 9.**

(End of Clause)

(End of Section H)

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION
SPECIAL CONTRACT REQUIREMENTS

Project AR-PFH 159(1)
Ouachita National Forest

The following Special Contract Requirements amend and supplement the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects (FP-03)* U. S. Customary Units, U. S. Department of Transportation, Federal Highway Administration.

Section 101.—TERMS, FORMAT, AND DEFINITIONS

101.01. Delete the last paragraph.

Section 102.—BID, AWARD, AND EXECUTION OF CONTRACT

102.04. Add the following:

Furnish documentary evidence as to the ownership and value of the assets pledged in support of the bond and details of the security interest in the assets by the individual sureties for the apparent low bidder within 14 calendar days after the opening of bids. Failure to submit evidence within the time required will be grounds for declaring the surety unacceptable.

In addition, the CO may, after reviewing the Affidavit of Individual Surety and documentary information on the security interest and the assets pledged, by certified mail to the surety's business or residence address (as shown on the bond), request the surety to provide further information and/or documents with respect to any of the documents provided. The CO may require such information to be furnished under oath. Failure of the surety to accept such mail, or failure of the surety to respond with the requested information or documents within 7 business days of receipt of the request, will be cause for rejection of the surety.

These requirements are in addition to the requirements in FAR Subpart 28.203, except where in conflict with the requirements in the FAR, in which case the FAR controls.

102.06. Add the following after the last paragraph:

Submit the documentary evidence for individual sureties at the same time as the Affidavit of Individual Surety and security interest in assets pledged. A Contractor submitting an unacceptable individual surety in satisfaction of a performance or payment bond before the issuance of the Notice to Proceed will be permitted one opportunity to substitute an acceptable surety or sureties within 7 business days of receipt of notification that the surety is unacceptable.

The Government's right to direct the substitution of sureties to ensure the continuing acceptability of the bonds during the performance of the Contract according to FAR Clause 52.228-2, Additional Bond Security, is not restricted.

These requirements are in addition to the requirements in FAR Subpart 28.203, except where in conflict with the requirements in the FAR, in which case the FAR controls.

Section 104.—CONTROL OF WORK

104.03(a). Add the following to the third paragraph:

Drawings will be reviewed in the order they are received.

104.03(b). Add the following after 104.03(b):

(c) As-built working drawings. Furnish 2 sets of as-built working drawings. The Government will provide 2 sets of contract drawings to be used exclusively for recording the as-built details of the project.

Keep the as-built working drawings current on a weekly basis and have at least 1 set available on the jobsite at all times. Accurately and neatly record changes from the contract plans, which are made in the work, or additional information, which might be uncovered in the course of construction, as they occur by means of details and notes. Maintain a log of all changes made to the as-built working drawings, and monthly, at the estimate cutoff date, make the as-built working drawings and log available for review by the CO.

Note all additions or revisions to the location, character, and dimensions of the prescribed work shown on the contract drawings. Line out all details shown that are not applicable to the completed work. Use the red-line process (red pencil or red ink) to record on the as-built working drawings and final as-built drawings, as a minimum, but not limited to, the information described below:

(1) Typical section(s)

(a) Revisions in dimensions; and

(b) Revisions in materials.

(2) Plan and profile

(a) Plan

(1) Revisions to the alignment;

(2) Changes in the construction limits;

(3) Revisions in location, type, and grade of road approaches;

(4) Location and type of utilities;

(5) Location, size, and type of underdrains;

(6) Skew of culverts;

- (7) Channel changes;
- (8) Location of monuments and permanent references;
- (9) Elevations for all aerial and underground crossings of utilities; and
- (10) Location, length, and type of fencing.

(b) Profile

- (1) Revisions to grades, elevations, and stationing of intersection PIs;
- (2) Equations;
- (3) Culvert diameter, length, type, and stationing;
- (4) Length of culvert extension, and length of existing culvert;
- (5) Location, length, stationing, and type of retaining walls; and
- (6) Location, length, stationing, and end treatment of guardrail.

(3) Bridge

- (a) Stationing of bridge ends;
- (b) Elevations including footing, bearing pads, deck, and top of walls;
- (c) Pile driving record with pile length, size, type, and tip elevation;
- (d) Post-tensioning records including stressing sequence, jacking force, and duct size and layout;
- (e) Construction and concrete placement sequences;
- (f) Bearing details with orientation;
- (g) Expansion joints including actual clearance with atmospheric temperature; and
- (h) Any changes in plan or dimensions including any major changes in reinforcing.

(4) Miscellaneous

- (a) Revisions to parking areas or turnouts;

(b) Final location, type and length of curbs, sidewalks, etc.;

(c) Fencing type and limits; and

(d) Landscaping and planting.

(5) Special Contract Procedures

(a) Method of excavation, concrete placement, girder erection, structure repairs, etc.

Prepare final as-built drawings after the completion of each definable feature of work as listed in the Contractor Quality Control Plan (Foundations, Utilities, Structural Steel, etc., as appropriate for the project). The as-built working drawings and final as-built drawings will be jointly reviewed for accuracy and completeness by the CO and the Contractor prior to submission of each monthly pay estimate.

If the monthly review finds that the Contractor is not maintaining the as-built working drawings, payment of the Contractor's invoice will be withheld until the as-built working drawings are brought up to date.

Furnish the as-built working drawings to the CO before the final inspection. Correct all details found during the final inspection that are not shown on the as-built working drawings and return to the CO within 5 working days for approval.

Once final as-built working drawings have been approved by the CO, provide final as-built drawings in the latest version of Adobe Acrobat (PDF) format (at the time of submission) on two sets of CD-R or DVD-R. Include the latest version Adobe Acrobat reader on the CD-R or DVD-R. Provide the final as-built drawings with a resolution quality such that the redlined drawings and notations are clearly discernable. Final payment per Subsection 109.09 will not be made until the CD-R or DVD-R of the final as-built drawings have been reviewed and approved by the CO.

No direct payment will be made for maintaining and furnishing as-built working drawings.

Section 105.—CONTROL OF MATERIAL

105.02(b). Add the following:

If any material is to be excavated from any material source outside the construction limits, other than commercially operated sites, before work begins provide a certification from the State Historic Preservation Officer or Indian Tribal Council, if applicable, stating:

- (1) That a cultural resource survey (a survey for historical sites and archeological remains) has been performed at the proposed site, and
- (2) That no significant cultural resources exist in the area that will be disturbed by the Contractor.

Section 106.—ACCEPTANCE OF WORK

106.03. Delete the first sentence of the second paragraph and substitute the following:

Other than references in or to the FAR or Federal Law, when these Standard Specifications or Supplemental Contract Requirements reference certifications; certificates; or certified documents, equipment, or individuals, these references are not certifications under Section 4301 of Public Law 104-106, National Defense Authorization Act for Fiscal Year 1996.

Section 107.—LEGAL RELATIONS AND RESPONSIBILITY TO THE PUBLIC

107.01. Add the following:

The following permits may be required for this project:

Hauling Permit

This list of permits may not be all inclusive of those required for construction. No time or damages, including impact damages, will be allowed for failure to obtain necessary permits or agreements. Provide copies of these permits and agreements upon request.

107.01. Delete the second sentence of the third paragraph and substitute the following:

Obtain all additional permits or agreements and modifications to Government-obtained permits or agreements that are required.

107.02. Add the following after the sixth paragraph:

Contact the following company for utility information prior to digging:

Arkansas One Call System, Inc.
Phone: 800-482-8989 or 811

Notify the CO in writing at least 48 hours in advance of any scheduled utility shutdown, investigation, and /or related work.

107.05. Add the following after the second paragraph:

Submit all claims to the insurance company for investigation, regardless of deductible, unless the Contractor has chosen to pay the claim directly. Provide the results of any investigations and subsequent actions to the CO within 1 week of receipt from the insurance company or of action. Determination by the insurance company that the claim is not covered by the policy is not an adequate basis for the Contractor to fail to meet its obligations under the requirements of this Section.

107.10. Add the following:

The project lies within the boundaries of a National Forest. Maintain all equipment, office, and material staging or repair areas in a neat and orderly condition at all times. Store all fuel and oil in accordance with all applicable federal, state, and local regulations. Clean up fuel and oil spills immediately and dispose of contaminated material in a manner consistent with all environmental regulations. Immediately notify the CO of any spills that have occurred. The Contractor's personnel are strictly prohibited from depositing trash or construction debris within areas of the project or within the National Forest boundaries, unless in Contractor furnished trash bins located in the staging area.

107.11. Add the following:

Confine all operations to the work limits of the project. Prevent damage to natural and cultural surroundings. Repair or replace, at no expense to the Government, any monuments, historical markers, trees, or other items damaged due to the Contractor's operations.

Section 108.—PROSECUTION AND PROGRESS

108.01. Add the following:

Construction operations are limited as follows:

No work will be permitted on Sundays or National legal holidays.

Section 109.—MEASUREMENT AND PAYMENT

109.08(b). Add the following:

Submit invoices by the 7th day after the closing date. Invoices received after the 16th day following the closing date will not be accepted for payment processing that month. Include late, unprocessed invoice submittals in the following month's invoice.

109.08(c). Add the following:

The government's designated billing office is:

Federal Highway Administration
 Eastern Federal Lands Highway Division
 Loudoun Tech Center
 21400 Ridgetop Circle
 Room 200
 Sterling, Virginia 20166-6511
 ATTN: CONSTRUCTION DIVISION

Section 152.—CONSTRUCTION SURVEY AND STAKING

152.03. Delete the text of paragraphs **(g)**, **(h)**, **(j)** and **(k)**.

152.03(a). Add the following:

Set benchmarks (at least every 1,000 feet of roadway). Replace any missing control points.

152.03(I)(9) and (10). Delete the subsections and replace with the following:

(9) Traffic control (both permanent and temporary) signs, signals, markings, delineators, object markers, etc.

152.03(I). Add the following:

(10) Excavation limits for various drainage, walls, structures, and other pertinent items.

Section 154.—CONTRACTOR SAMPLING AND TESTING

154.03. Add the following:

Furnish test results to the CO immediately after completing the test. The requirements for furnishing test results do not include sample aging or curing time; therefore, reporting times will be extended accordingly.

Submit proposals for using alternate AASHTO or State approved test methods in writing for approval. Alternate methods may be allowed based on documented equivalence to the method specified.

Section 155.—SCHEDULES FOR CONSTRUCTION CONTRACTS

155.02. Add the following after the third paragraph:

155.02A Weather Delays.

(a) Weather Delay Definitions.

(1) Reasonably Predictable Weather. The number of workdays that can expected to be lost in any month due to rainfall based on 10-year historical weather data.

(2) Rain Day. A potentially lost workday on which rainfall is equal to or greater than 0.10 inches.

(3) Drying Day. A work day(s) immediately following a rainfall equal to or greater than 1.00 inch which is potentially lost because of wet ground conditions.

(4) Workday. A day not excluded from work by Section 108 of the Special Contract Requirements.

(5) Unusually Severe Weather. When the number of Actual Workdays Lost is greater than the calculated Total Lost Days for the month in question.

(b) Reasonably Predictable Weather. Determine Reasonably Predictable Weather for this contract by completing Table 155-1. Calculate data for Table 155-1 as follows:

(1) Using the last 10 years of historical weather data from the nearest NOAA weather data collection station, compute the average number of workdays lost (rain days plus drying days) for each month and the standard deviation from the average. Add the average number of workdays lost to the standard deviation.

(2) The Total number of Lost Days (Average Workdays Lost plus 1 Standard Deviation, rounded to whole days) will be considered normal for each month.

(3) Submit a completed Table 155-1 with the initial construction schedule.

(c) Unusually Severe Weather Under FAR Clause 52.249-10, Default (Fixed-Price Construction), the Contractor can request time for a delay due to Unusually Severe Weather.

The number of Actual Workdays Lost is calculated by first totaling the actual Rain Days plus the actual Drying Days occurring in the month in question. From this total, deduct any workdays meeting the following conditions:

(1) The Rain Day or Drying Day occurred on a non-work weekday such as a holiday.

(2) Rainfall occurred at a time when no weather dependent work was in progress or occurred during planned or unplanned shutdowns due to other circumstances such as equipment failure, strikes, material supplies, delays, etc.

(3) The Contractor was still working or able to work on weather dependent activities to the extent that less than 50 percent of the workday was lost due to weather.

If the net number of Actual Workdays Lost is greater than the Total Lost Days, then Unusually Severe Weather occurred during the month in question.

(d) Time Adjustments for Rain Delays. If the net number of Actual Workdays Lost to rain is less than the Total Lost Days for the month in question, no time adjustments will be made. If the net number of Actual Workdays Lost is more, then an excusable time extension may be granted. The Contractor must submit a Weather Time Impact Analysis supporting any alleged delays due to Unusually Severe Weather.

(e) Delays Due To Other Weather Conditions. Delays due to other unusually severe weather conditions (snow, extreme cold or heat, high winds, etc.) must be supported with a Weather Time Impact Analysis using historical weather data.

155.02. Delete the last paragraph and substitute the following:

The Construction Contract Time shown on the construction schedule for contract completion or for any interim completion dates shall be the calendar dates established in the contract.

155.04. Add the following to the first paragraph:

For a computer-generated CPM, use Primavera software or software that is file-compatible with Primavera.

Add the following at the end of the Subsection:

TABLE 155-1

Project Number _____

Location of NOAA Data Collection Station _____

Data Years (10-year history): 19__ through 20__

REASONABLY PREDICTABLE WEATHER

MONTH	AVERAGE WORKDAYS LOST	STANDARD DEVIATION	TOTAL LOST DAYS
JANUARY			
FEBRUARY			
MARCH			
APRIL			
MAY			
JUNE			
JULY			
AUGUST			
SEPTEMBER			
OCTOBER			
NOVEMBER			
DECEMBER			

Section 156.—PUBLIC TRAFFIC

156.03. Add the following:

Buckeye Vista Overlook may be closed for the duration of the project.

Caddo Road must remain open to public traffic at all times. Accommodate public traffic through the project as follows:

(a) Work periods. Maintain traffic through the work zone using flaggers whenever work is in progress.

(b) Non-work periods. Maintain traffic using a single lane closure layout with yield sign. Install advance work zone signing as shown in the plans or directed by the CO.

156.06(b). Delete the second sentence and substitute the following:

For shoulder drop-offs in excess of 3 inches, provide a 1V:3H fillet with “*Low Shoulder*” warning signs.

156.06(c). Delete the first sentence and substitute the following:

Provide minimum lane widths of 9 feet.

156.06(d). Add the following:

The staging area may be located approximately one mile north of the project on the east side of Caddo Road, just south of the intersection with CR 602. Do not remove or damage any trees in or around the staging area.

156.07. Delete the Subsection and substitute the following:

156.07 Nighttime Operations. Nighttime operations are not permitted. Perform construction operations during the hours of daylight (½ hour after sunrise to ½ hour before sunset).

156.08. Delete the second sentence of the first paragraph and substitute the following:

The traffic safety supervisor may be the superintendent.

Section 203.—REMOVAL OF STRUCTURES AND OBSTRUCTIONS

203.03. Add the following:

Salvage stone from existing stone masonry retaining wall, and stockpile at a designated area on the project as directed by the CO.

203.05(b). Delete the Subsection and substitute the following:

(b) Burn. Burning is prohibited. Dispose of material according to Subsection 203.05(a) or Subsection 203.05(c).

203.05(c). Add the following:

A waste area for disposing of excess rock, earth, and other non-hazardous material removed from the project is available approximately 2 miles south of the project, on the east side of Caddo Road across from the Route 38-A intersection. The CO will flag the limits of the waste area prior to the beginning of construction. Grade the existing roadside berm as necessary to provide access to the waste area. At the completion of waste disposal operations, grade the area to drain as directed by the CO, place 2-inch depth topsoil according to Section 624, and establish turf according to Section 625. Restore the roadside berm to the approximate original contours.

Section 207.—EARTHWORK GEOTEXTILES

207.01. Add the following:

This work includes furnishing and placing geogrid as a soil reinforcement measure. Furnish and place geogrid according to the same procedures specified in this Section for geotextile, except where specific requirements are provided for geogrid.

207.02. Add the following:

Geogrid

714.03

207.03. Add the following:

Furnish geogrid packaged in containers suitable to protect the geogrid from damage due to ultraviolet light, and from abrasion during storage and handling. The containers shall be visibly labeled with the name of the manufacturer, product identification, date of manufacture, lot number, length, width, and quantity. Do not remove the geogrid from the containers until the time of placement. The geogrid must be free from any defects, tears, abrasion, deterioration, or other damage.

207.04. Add the following:

Where placing geogrid on a foundation, perform the work under Section 208.

207.06. Add the following:

Material for geogrid will be evaluated under Subsections 106.02, 106.03, and 714.03.

Section 255.—MECHANICALLY-STABLIZED EARTH WALLS

255.02. Add the following:

Underdrain system	605
Stone masonry	620
Geotextile type IIIA	714.01
Geogrid	714.03

255.03. Delete the first paragraph and substitute the following:

Survey according to Section 152, and verify the limits of the wall installation. Prepare and submit documentation on the methods to be used to construct the mechanically-stabilized earth walls according to Subsection 104.03. Describe the methods that will be used to prepare the site; install the wire baskets; and place, spread, and compact the backfill. Provide details for the proposed method of holding the geogrid in place during backfilling.

Perform the work under Section 209. Grade the foundation to the elevations and dimensions shown in the plans. Where the wall is set on a rocky foundation, place at least 6 inches of select granular backfill under the geogrid. Place geogrid according to Section 207.

255.04. Add the following:

Provide personnel experienced in the construction of mechanically-stabilized earth walls using geogrid reinforcement, as evidenced by the successful completion of at least 2 mechanically-stabilized earth walls. Submit the qualifications of the personnel to the CO for approval at least two weeks prior to beginning geogrid reinforcement work.

255.06. Add the following:

Geogrid will be evaluated under Section 207.

Underdrain will be evaluated under Section 605.

Stone masonry will be evaluated under Section 620.

255.07. Add the following:

Measure geotextile and geogrid under Section 207.

Measure structure excavation under Section 208.

Measure underdrain system under Section 605.

Measure stone masonry under Section 620.

Section 308.—MINOR CRUSHED AGGREGATE

308.06. Delete the third and fourth paragraphs and substitute the following:

Construction of roadway aggregate courses will be evaluated under Subsections 106.02 and 106.04. Method 2 compaction will be evaluated under Section 106.04. Sample crushed aggregate for roadway according to Table 308-1. Submit crushed aggregate for roadway samples to the CO for verification. Materials that do not meet the approved certification will be considered unacceptable.

Section 554.—REINFORCING STEEL

554.08. Delete the first sentence of the first paragraph and substitute the following:

Place, fasten, and support the bars according to the *CRSI Manual of Standard Practice*. Use precast concrete blocks or metal supports.

Section 601.—MINOR CONCRETE STRUCTURES

601.03. Delete the first sentence and substitute the following:

Conform to Table 601-1 or furnish a concrete mix used locally by either a Federal or State agency for the construction of minor concrete structures, that also meets the minimum 28-day compressive strength requirement of Table 601-1.

601.08. Delete the second paragraph and substitute the following:

Measure concrete by the cubic yard in the structure. Measurement includes the reinforcing steel.

Do not measure concrete used in constructing guardrail installations.

Section 605.—UNDERDRAINS, SHEET DRAINS, AND PAVEMENT EDGE DRAINS

605.02. Delete the first and sixth materials and substitute the following:

Aluminum alloy corrugated pipe, Type III	707.03
Metallic coated corrugated steel pipe, Type III	707.02

605.02. Add the following:

Polymer-coated steel pipe	707.08
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Section 617.—GUARDRAIL

617.02. Add the following:

Stone masonry	620
---------------	-----

617.03. Delete the text of this Subsection and substitute the following:

617.03 Stone pedestals. Construct stone pedestals for log guardrail according to Section 620 and as shown in the plans.

617.09. Add the following:

Stone masonry will be evaluated under Section 620.

617.10. Delete the second paragraph and substitute the following:

Measure guardrail by the linear foot from end to end of each log rail element. Measurement includes concrete footings, stone pedestals, log rails, and all other material necessary for a complete installation.

Section 620.—STONE MASONRY

620.03. Add the following:

Masonry is designated as rubble masonry with a 0.25 RF finish for stone masonry for retaining wall facing and guardrail pedestals.

Use stone salvaged from the existing retaining wall to face the mechanically stabilized earth wall. Use existing stone to the maximum extent possible. Replace missing or damaged stone with new stone that is similar in size, shape, color, texture, and finish to the existing stone.

Provide stone for guardrail pedestals that is similar in shape, color, texture, and finish to the

stone used for facing the retaining wall.

620.04. Delete the first sentence of the first paragraph and substitute the following:

Place stone to match the appearance of the existing retaining wall.

620.04. Delete the third paragraph and substitute the following:

Spread the mortar. Construct the beds and joints at approximately the same thickness and orientation as the beds and joints in the existing retaining wall.

620.05(a). Add the following:

Place and shape the mortar in the joints for the stone masonry retaining wall facing, and the stone pedestals for guardrail, to match the appearance of the joints in the existing retaining wall.

620.11. Add the following:

Measure stone masonry for facing the retaining wall by the square yard on the front face. Measurement includes resetting salvaged stone, and furnishing and setting new stone.

Do not measure stone masonry used in constructing guardrail installations.

Section 625.—TURF ESTABLISHMENT

625.01. Add the following:

The work does not include areas previously protected by soil erosion control measures according to Section 157, and upon which permanent suitable vegetation has started growth.

625.02. Add the following:

Use wheat or rice straw mulch.

625.06. Add the following:

Apply limestone and fertilizer at the following rates:

<u>Item</u>	<u>Rate (pounds per acre)</u>
Agricultural Limestone (85 percent CaCO_3)	3100
Fertilizer	800

625.07. Add the following:

Apply seed at the rates for each season as follows:

<u>Name of Seed</u>	<u>Seeding Seasons and Rates (pounds per acre)</u>
	<u>Warm Season</u> <u>(March 1 to September 15)</u>
Browntop millet (<i>Urochloa ramosa</i>)	20
Switch Grass (<i>Panicum virgatum</i>)	<u>5</u>
	Total Seed 25
	<u>Cool Season</u> <u>(September 16 to February 28)</u>
Annual ryegrass (<i>Lolium perenne</i> L. ssp. multiflorum)	20
Elbon rye (<i>Secale cereale</i>)	<u>25</u>
	Total Seed 45

625.08. Add the following:

Use wheat or rice straw mulch.

625.08. Add the following:

Apply mulch at the following rates:

<u>Mulch</u>	<u>Rate (pounds per acre)</u>
Straw	4000 (1 to 2 inch mat)

Section 635.—TEMPORARY TRAFFIC CONTROL

635.02. Delete the Construction sign panels Section reference and substitute the following:

Construction sign panels	633.02
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635.03. Add the following:

For all signs and other devices requiring orange color, use fluorescent orange, fluorescent red-orange, or fluorescent yellow-orange color.

635.03(i). Add the following:

Submit a certification that the devices have been successfully crash tested to meet the requirements of NCHRP 350 and/or have been accepted by the FHWA.

635.07 Delete the last sentence and substitute the following:

Remove or completely cover all unnecessary signs, or signs that conflict with the construction signing or Traffic Control Plan. Cover signs that are not removed so that no part of the covered sign is visible to traffic. Provide sign covers for temporary signs meeting the following requirements:

- a) Large enough to completely cover the sign.
- b) Easy to attach to and remove from the sign without damaging the sign face. Do not use adhesives, glues, tapes, or mechanical fasteners that mar the sign face.
- c) Black, non-reflective, and opaque.
- d) Made of plywood (minimum of 3/8-inches thick), aluminum (minimum of 0.040 inches thick), or sheet metal of a sufficient thickness that the covering will not be lifted, bent or damaged by wind.
- e) Durable enough to resist deterioration due to weathering and atmospheric conditions for the duration of the project.

635.11. Add the following after the second sentence of the first paragraph:

Use temporary barriers that meet test level TL-2 criteria, per NCHRP Report 350 for crashworthiness standards.

635.11. Delete the second paragraph and substitute the following:

Mount flexible plastic 6-inch by 6-inch delineators with Type III or IV retroreflective sheeting to the top of concrete barriers on 25-foot centers. Furnish white sheeting.

Section 703.—AGGREGATE

703.02. Add the following:

Gravel will not be permitted.

Section 705.—ROCK

705.03(a). Delete the text and substitute the following:

Do not use rock with depressions or projections that might weaken it or prevent it from being properly embedded.

Furnish new stone to replace missing or damaged stone in the retaining wall that is similar in size and shape to the existing stone. Do not use any stones larger in greatest dimension than the largest existing stone, nor smaller in least dimension than the smallest existing stone.

Furnish new stone for stone pedestals that is irregularly shaped and conforms to the following: no stone shall be less than 4 inches in least dimension, and no stone shall be greater than 12 inches in vertical or horizontal dimension, or 6½ inches in depth dimension.

Submit stone samples representing every color to be used on the project to the CO for approval.

Section 713.—ROADSIDE IMPROVEMENT MATERIAL

713.01. Add the following:

For furnished topsoil, submit a soil analysis report from the State University Agricultural Extension Service or other approved soil testing laboratory. Include in the report the soil textural classification (percentage of sand, silt, clay and organic matter) and additive recommendations.

713.03. Add the following:

Furnish fertilizer containing the following minimum available nutrients, unless soil analysis indicates higher concentrations are required:

Total nitrogen	10 percent
Available phosphoric acid	20 percent
Water-soluble potash	10 percent

Section 714.—GEOTEXTILE AND GEOCOMPOSITE DRAIN MATERIAL

Add the following after Subsection 714.02:

714.03 Geogrid. Furnish geogrid with a regular network of integral connected polymer tensile elements having an aperture geometry and junction strength to sufficiently permit significant mechanical interlock with the surrounding soil or rock. Provide geogrid with a dimensionally stable structure that is able to retain its geometry under manufacture, transport, installation, ultraviolet degradation, and all forms of chemical and biological degradation encountered in the soil being reinforced.

(a) Physical requirements. Provide geogrids composed of fibers or ribs that are at least 85% by weight polyethylene, polypropylene, or polyester. Form a network of fibers that will retain dimensional stability. Conform to the physical requirements in Table 714-7.

Table 714-7
Geogrid Physical Requirements

Property	Test Method	Minimum Acceptable Values
Wide width tensile strength (ultimate), lb/ft	ASTM D 6637	5000 ⁽¹⁾
Wide width tensile strength (5% strain), lb/ft	ASTM D 6637	2000 ⁽¹⁾
Maximum aperture size, inches	-----	0.8 ⁽¹⁾
Weight, oz/yd ²	ASTM D 5261	8
Resistance to soil burial	ASTM D 3083	No change
Long Term Design Strength, lb/ft	GRI:GG4	1,500 ⁽²⁾

⁽¹⁾ Machine direction

⁽²⁾ Principle (highest strength) direction

Identify, store, and handle geogrid according to ASTM D 4873-88. Limit geogrid exposure to ultraviolet radiation to less than 10 days.

(b) Evaluation procedures. Geogrid will be evaluated under Subsection 106.03. Furnish a commercial certification that the geogrid supplied meets the required index criteria, measured in full accordance with all test methods and standards set forth in these specifications. State on the commercial certification the name of the manufacturer, product name, style number, chemical composition of the filaments, ribs, or yarns, and other pertinent information to fully describe the geogrid.

When samples are required, remove a 3-foot long, full-width sample from beyond the first outer wrap of the roll. Label the sample with the lot and batch number, date of sampling, project number, item number, manufacturer, and product name.

Section 720.--STRUCTURAL WALL AND STABILIZED EMBANKMENT MATERIAL

720.02. Add the following:

(d) Welded Wire Facing Units. Fabricate the mesh by welding galvanized steel wire conforming to ASTM A 641M class 3. Use wire with a minimum tensile strength of 60×10^3 psi when tested according to ASTM A 370. The galvanized coating may be applied after mesh fabrication. Twisted wire baskets are not allowed.

Fabricate the baskets to the dimensions required in the Plans, within a dimensional tolerance of ± 5 percent. Fabricate the mesh for galvanized or aluminized coated welded wire mesh baskets from nominal sized 0.225 inch diameter (W4 x W4) wire fabric conforming to AASHTO M55. Weld each connection to obtain a minimum shear strength of 600 lbf.

**SOILS AND FOUNDATIONS
REPORT NO. 11-07**

**PROJECT AR PFH 159(1)
BUCKEYE VISTA OVERLOOK
RETAINING WALL REHABILITATION**

**OUACHITA NATIONAL FOREST
POLK COUNTY, AR**



U.S. Department of Transportation
Federal Highway Administration
Eastern Federal Lands Highway Division
21400 Ridgetop Circle
Sterling, VA 20166

September 2007

TABLE OF CONTENTS

<u>REPORT</u>	<u>PAGE</u>
INTRODUCTION.....	1
General.....	1
Project Description.....	1
Regional Geology	1
PROCEDURES AND RESULTS	2
Soils Boring	2
Sampling	2
Laboratory Testing.....	3
Findings.....	3
<i>Soil Borings</i>	3
<i>Groundwater</i>	4
DESIGN ANALYSIS	5
Retaining Wall	5
RECOMMENDATIONS	7
CONSTRUCTION CONSIDERATIONS	8
 <u>APPENDICES</u>	
Appendix A – Figures	
Appendix B – Boring Location Plan and Subsurface Profile	
Appendix C – Boring Logs	
Appendix D – Laboratory Test Results	
Appendix E – Computer Output (MSEW)	
Appendix F – Computer Output (ReSSA)	
Appendix G – Plan and Typical Sections	
Appendix H – Representative Photographs	
Appendix I – Gravel Road Design Chart	

Note: Design changes made subsequent to distribution of this report and prior to project a memo inserted after the title page will document advertisement.

**SOILS AND FOUNDATIONS
REPORT NO. 11-07**

**PROJECT AR PFH 159(1)
BUCKEYE VISTA OVERLOOK
RETAINING WALL REHABILITATION**

**OUACHITA NATIONAL FOREST
POLK COUNTY, AR**

INTRODUCTION

General

This report presents the findings of the subsurface investigation, laboratory testing, geotechnical analysis, and summarizes our evaluations and recommendations for a retaining wall located at Buckeye Vista Overlook. The overlook is located on Caddo Road in Ouachita National Forest near Mena in Polk County, Arkansas. A Project Location Map is presented in Appendix A.

Project Description

The historic stone retaining wall was constructed around 1934. The wall has a crescent shape and a $110\pm$ feet long cord. The height of the mortared stone wall is $9.7\pm$ feet with a guard wall that is $1.5\pm$ feet above the gravel road. The overlook accommodates a one lane gravel road, that is 19 ft to 21 ft wide. Forest Service (FS) representatives noticed severe cracks and deterioration in the wall. Description of the current wall condition is provided in the design analysis section. Photos showing wall condition are included in Appendix D.

Regional Geology

The Geologic Map of Arkansas (1976) indicates that the project site is located within the Ouachita Mountains physiographic province. The Ouachita mountain land resource area is characterized by tilted and folded, fractured layers of shale, sandstone, chert, novaculite, and quartzite. The parent rock at the subject site appears to belong to the Stanley Shale formation, which is composed of dark gray shale interbedded with fine grained sandstone.

The Soil Survey of Polk County, Arkansas indicated that surficial materials at the site are residuum, colluvium, and alluvium deposits, which include the Bengal, Bismark, and Carnasaw soils. These soils consist primarily of cobbly and gravelly silt loam that were formed from in-situ weathering of the shale. A geologic map and a soil map in the project vicinity are presented in Appendix A.

PROCEDURES AND RESULTS

Soil Borings

A field investigation was conducted by the Eastern Federal Lands Highway Division (EFLHD) Geotechnical Subsurface Investigation Team on October 31st and November 1st, 2006. The field investigation consisted of drilling three (3) soil borings (B-1 through B-3) and one (1) probe hole (PH-1). The soil borings were drilled as close as practically possible to the stone retaining wall and the probe hole was drilled in the adjacent gravel road to confirm the subsurface conditions.

Boreholes were laid out by EFLHD field personnel by measuring distances from mapped landmarks. Borings were advanced to depths ranging from 20 ft to 32 ft below existing site grades. All borings were advanced to termination depths using hollow-stem augers by CME 850 track mounted rotary drill rig. All boreholes were backfilled with auger cuttings upon completion. Borings were graphically depicted on the Boring Location Plan and Subsurface Profile sheets in Appendix B. Boring Logs are presented in Appendix C.

The results of field tests and measurements were recorded on driller's logs and appropriate data sheets in the field. These logs and data sheets contain information concerning the boring methods, samples attempted and recovered, indications of the presence of various materials such as gravel, pebbles, organic matter, etc., and observations of groundwater. They also contain interpretations by the subsurface exploration team leader of the subsurface conditions based on the performance of the equipment and cuttings brought to the surface by the drilling tools at that particular time. Therefore, the field data represents both factual and interpretive information.

The boring logs in Appendix B of this report represent a compilation of field and laboratory data and descriptions of the soil samples by a geotechnical engineer. These records occasionally do not include all data recorded on driller's logs and field data sheets, but do include all information considered relevant to design and construction of this project.

Sampling

Sampling of materials beneath the tip of the hollow stem augers was performed in all borings. Sampling was typically conducted at 5 ft intervals to the termination depths of the soil borings.

Standard penetration test resistances (SPT's) were performed using a 2 1/4-in outside diameter split-barrel sampler in accordance with AASHTO T200-87 and AASHTO T206-87. The sampler was driven into the soil for a length of 24-in using a 140 lb automatic hammer falling 30 inch. The number of blows required for the hammer to drive the sampler a distance of 6-in was recorded on the boring logs. Upon completion of the SPT's, the sampler was removed from the ground and sample recovery measurements were made

and recorded for each sampling attempt. A field description by color and texture was made for each recovered sample. Representative portions of the disturbed samples were retained in glass jars. The sampling sequence for soil borings is summarized on the Boring Logs presented in Appendix C. No groundwater levels were recorded in the borings.

Laboratory Testing

At the conclusion of the fieldwork, laboratory testing was conducted on representative soil samples. All phases of the laboratory testing were conducted in accordance with the applicable AASHTO Specifications. Laboratory tests included natural moisture content (AASHTO T-265), mechanical and hydrometer gradation (AASHTO T-88), Atterburg limits (AASHTO T-89, T-90), Specific Gravity (AASHTO T-100), and soil classification (AASHTO M-145). The results of the laboratory tests are summarized in Table 1 below:

Table 1. Summary of Laboratory Results

Boring Number	Sample Depth (ft)	Liquid Limit (%)	Plastic Limit (%)	PI (%)	Natural Water Content (%)	Soil Classification
B-1	5-7	32	20	12	9.2	A-6 (3)
B-2	0-5	29	21	8	7.2	A-2-4 (0)
B-2	10-12	33	20	13	8.2	A-6 (5)
B-2	20-22	38	21	17	12.8	A-2-6 (1)
B-2	30-32	32	18	14	20.0	A-6 (2)
B-3	15-17	39	22	17	14.3	A-2-6 (1)

The detailed Laboratory test results are presented in Appendix D.

Findings

Soil Borings

Descriptions of the soil conditions encountered during the subsurface exploration are provided below. It should be noted that the stratification lines designating the interfaces between soil types on the logs of the borings represent approximate boundaries and the transition between materials may be gradual. It should also be noted that one or more of the units may be absent at specific locations.

Fill – This stratum consisted primarily of brown to orange brown clayey sand in Boring B-1 and clayey gravel in Boring B-2. The stratum extended to depths of 7 ft to 10 ft below ground surface (bgs) in Borings B-1 and B-2, respectively. The standard penetration test resistance values (N-values) recorded for this layer ranged from 9 to 32 blows/ft (bpf) indicating loose to medium dense granular soil condition. LL ranged from 29 to 32 and PI ranged from 8 to 12. The gravel is described as dark red to brownish yellow with silty and sandy clay. Recoveries ranged from 33 to 67 percent.

Natural Deposits – Beneath the above-mentioned fill materials, natural deposits were encountered in all of the borings. In general, two main strata were encountered within the borings termination depths. Each of the soil types has been grouped according to its engineering classification. These strata are described briefly in the following paragraphs:

Stratum I-SANDY CLAY

Underneath the above-mentioned fill materials or beneath the surface in Boring B-3, brown to orange brown sandy lean clay stratum was encountered. The thickness of this stratum ranged from 2± ft in Boring B-2 to 10± ft in Boring B-1. N-values recorded in this stratum ranged from 21 bpf to 50 blows/3", indicating very stiff to hard clay consistencies. Laboratory testing on a soil sample from Boring B-2 yielded LL and PI of 33 and 13, respectively.

Stratum II-CLAYEY SAND

Underneath the sandy clay stratum, a brown to orange brown clayey sand layer was encountered in Borings B-2 and B-3. This layer extended to the termination depths of Borings B-2 and B-3. N-values recorded in this stratum ranged from 17 to 42 bpf, indicating medium dense to dense sand condition. LL ranged from 38 to 39, with a PI of 17.

Decomposed Rock – Decomposed rock was encountered at a depth of 17± ft bgs in Boring B-1 and extended to the termination depth of the boring, at 22 ft bgs.

It should be noted that probe hole (PH-1), which was drilled in the adjacent gravel road, encountered a similar soil profile.

Groundwater

No groundwater was encountered in any of the borings during or after completion of drilling. However, fluctuations in the groundwater conditions due to seasonal weather changes should be anticipated.

DESIGN ANALYSIS

Retaining Wall

The initial options that were considered for the wall included repair and stabilization of the existing wall or its replacement. However, based on assessment of the wall condition during our field work, the wall was observed to be in a deteriorated condition beyond repair. We observed a major vertical crack near the center that is 1 to 3 inches wide that extends along the entire height of the wall (see site photographs). We also observed several other vertical cracks, with different widths, at approximately 10 to 12 feet spacing along the wall. Based on these observations, wall replacement was our recommended option.

It is our professional opinion that the cracks observed in the wall are associated with lateral earth pressure. The wall was built in the 1940's and approaches/techniques to control hydrostatic pressure were not applicable at that time. Surface/seeped water is not properly channeled outside the wall and remains in the soil matrix (backfill) exerting additional pressure on the face of the wall resulting in vertical cracks.

Repairing the wall will not eliminate the source of the problem, which is the built up of hydrostatic pressure behind the wall. On the other hand, re-building the wall utilizing today's knowledge of drainage and seepage control will result in a safer and long-lasting structure.

Wall Selection Criteria

Several alternative retaining wall types were analyzed for use on this project. Decision criteria used included: initial cost, constructability, area of disturbance required for construction, aesthetics, and proven design. Retaining wall types considered were:

1. Steel H-pile and lagging (soldier pile) wall
2. Reinforced concrete gravity wall
3. Reinforced concrete cantilevered wall
4. Mechanically stabilized earth (MSE) wall Geosynthetically stabilized earth (GSE)
5. Prefabricated modular block wall
6. Gabion basket wall

Our analysis indicated that Mechanically Stabilized Earth (MSE) walls with stone facing offers the best alternative for the subject site. These walls are constructed using common construction materials, and conventional equipment and techniques, providing an economical, durable aesthetically pleasing wall. MSE walls are typically cost effective and tolerate larger differential settlements compared to other wall alternatives. MSE walls require the soil behind the wall face to be compacted with sufficient reinforcement to develop pullout resistance behind the critical failure plan.

A stone face is planned for all of the above alternatives in order to restore existing site aesthetic conditions.

Analysis for the proposed MSE wall was performed in accordance with the design concepts and procedures presented in FHWA Publication No. FHWA-FLP-94-006 (1994), “Retaining Walls Design Guide” and FHWA SA-96-071 (1997), “Mechanically Stabilized Earth Walls and Reinforced Soil Slopes Design and Construction Guidelines”. Design computations of the wall were performed using the Federal Highway Administration’s MSEW (2) Computer program in general conformance with the guidelines developed and published under Demonstration Project 82.

The wall was designed for a maximum height of 9.7 feet and a 1:10 (H:V) batter of the stone facing. Granular fill within the reinforced zone should meet the requirements of FP-03, Sec.704.10. This fill should be naturally occurring, non- plastic sand classifying as SM/ A-2-4 (0) or coarser with less than 25% passing a #200 sieve. Based on the results of our geotechnical study, we anticipate that the reinforced soil mass will need to be constructed using off-site borrow. The soil properties used in our computer modeling are summarized in Table 2 below:

Table 2. Soil Parameters for the MSE Wall

Soil Type	Unit Weight, γ (pcf)	Friction Angle, ϕ (deg)	Cohesion, c (psf)
Reinforced Soil (Fill)	120	32	0
Retained Soil	120	30	0
Foundation Soil	120	32	100

The retaining wall was analyzed with a uniformly distributed live surcharge load of 250 psf along the top of the wall to account for vehicular loading. In accordance with AASHTO (1996), “*Standard Specifications for highway bridges, 16th Edition*”, the live surcharge load was modeled as 2.0 ft of fill with a unit weight of 125 pounds per cubic foot (pcf). Factors of safety (FS) obtained in our analysis are listed in Table 3 below:

Table 3. MSE Wall Stability Criteria

Failure Mode	Minimum FS Required	FS Obtained	Remarks
Overturning	2.0	3.8	OK
Sliding	1.5	2.2	OK
Global Stability	1.5	1.6	OK
Bearing Capacity	3.0	8.3	OK

It should be noted that wall design analysis was performed utilizing a second computer program (ReSSA), as a check. Results obtained from both analyses were compatible. ReSSA's output is included in Appendix F.

Aggregate Surface Road

An aggregate surface road design analysis was conducted using the Aggregate-Surfaced Road Design Catalog for Low-Volume Road Design in accordance with the "AASHTO Guide for Design of Pavement Structures, 1993". This design procedure involves determining the traffic level and the quality of the roadbed soil.

The equivalent single axle loads (ESAL's) were selected from "Thickness Selection Chart Using Untreated Granular Base, National Asphalt Pavement Association, 1992" for a Class- I Traffic. ESAL value of 3,000 for a performance period of 10 years was considered in our analysis. Other design parameters considered were an allowable rut depth of 2 inches, a roadbed soil resilient modulus (M_R) value of 6,000 psi for compacted subgrade soils, and an aggregate loss value of 0.5 in/year.

RECOMMENDATIONS

Retaining Wall

The results of the design analyses are summarized below in Table 4. The computer generated output files from MSEW (2.0) program are provided in Appendix E. These output files provide the soil input parameters, the slide section geometry analyzed, reinforcement spacing type, strength and interaction parameters, the calculated factors of safety for the stability criteria presented above, and plots of the calculated critical failure planes.

Table 4. Retaining Wall Configuration

Wall Height (ft)	9.7	4.0
Minimum Reinforcement Embedded Length (ft)	9.0	4.0
Geogrid Design Tensile Strength (lb/ft)	1,000	1,000
Maximum Geogrid vertical Spacing (ft)	1.5	1.5
Minimum Wall Embedment Depth (ft)	2.5	2.5
Maximum Allowable Foundation Bearing Capacity (psf)	4,000	4,000
Face Batter	1(H):10(V)	1(H):10(V)

Our analysis indicated that a reinforcement length of 9 feet provided a stable wall configuration (global stability factor of safety of 1.59). Geogrid reinforcement should be installed in accordance with Section 714 of the FP-03 Specifications. Space geogrid layers at a maximum vertical spacing of 1.5 ft.

In areas where the height of the retained soils is equal to or less than 4 ft, a minimum reinforced length of 4 ft is recommended.

The stone facing should be constructed on concrete leveling pad. Leveling pad recommendations are listed below:

- Leveling pad should have a minimum width of 4.0 ft.
- Leveling pad should have adequate steel reinforcement to withstand design loads.
- Bottom of the leveling pad, bearing in the naturally deposited soil or on compacted granular fill, should be positioned below the frost line.

Mechanical tie connections should be provided at the front of each reinforcement layer to prevent the stone facing from overturning, as shown in Appendix G.

Typical MSE wall cross sections are presented in Appendix G.

Aggregate Surface Road

Based on our field observations, drilling operations, and laboratory analyses, we recommend that the proposed gravel road should have a minimum aggregate base course layer of 6 inches thick. The results of our design analyses are summarized in Table 5 below and the design chart is included in Appendix I.

Table 5. Minimum Pavement Section

Layer	Minimum Thickness (in)	Comments
Aggregate Base Course	6.0	Aggregate Base, Grading C or D as per Subsection 703.05(b) of the FP-03 Specifications

Construction of aggregate base course should follow the procedures listed in Section 301 of the FP-03.

Should unclassified borrow materials be required for earthwork or embankment purposes, these materials should meet the requirements of Subsection 704.06 of the FP-03. Embankment fill should be constructed in accordance with Section 204 of the FP-03.

CONSTRUCTION CONSIDERATIONS

Excavation and Sub-Excavation: In general, all temporary cut slopes constructed in soils should not be steeper than 1 horizontal to 1 vertical (1H:1V), unless otherwise allowed by OSHA. All excavations are to be performed in accordance with applicable OSHA standards and in accordance with Section 204 of the FP-03 Specifications. Temporary excavation in fill and/or natural material should be achievable using conventional earth-moving equipment in proper working condition. Any soft, wet, or unsuitable materials encountered below proposed footing elevations should be removed. Sub-excavated areas are to be backfilled with suitable on-site excavated material or select granular backfill.

Preparation and Protection of Footing Bearing Surfaces: If foundation excavation is being conducted during wet weather, the natural subgrade soils could be subject to disturbance by equipment and laborer traffic. Such disturbance could be reduced by maintaining excavation subgrades 12-in. above final subgrade elevations until just before final excavation, backfilling or footing construction. If these soils are disturbed at the final subgrade level, they should be excavated and replaced with a thin layer (maximum 1.0 ft thick) of compacted granular backfill. Otherwise, a 2 to 3 inch thick lean concrete mudmat may be required over the exposed subgrade prior to backfilling. This should be placed immediately after exposure and recompaction of the subgrade soils in the open excavations.


Backfill Material: As mentioned earlier, fill materials within the reinforced zone should meet the requirements of FP-03, section 704.10. All backfilling operations are to be conducted in-the-dry. Backfill material should be placed and compacted in lifts not to exceed 12 inches, per Section 204 of the FP-03 Specifications. Based upon the results of the laboratory testing, a very small portion of on-site excavated soil may satisfy the requirements of backfill material, stated above. The portion of the on-site excavated material that meets the select granular fill specifications may be used as backfill material.

Backfill Drainage: Provide weepholes through the stone masonry facing at a maximum height of 1.0 ft above the adjacent ground and spaced a maximum of 8 ft on-center. All weepholes should be approved non-perforated PVC pipes per Subsection 706.08(e) of the FP-03 Specifications. Provide approved geocomposite drains as per Section 714.02(b) of the FP-03 Specifications. Geocomposite drains should be placed against the back face of all walls. The geocomposite drains should extend from the top of the weepholes to the bottom of the proposed aggregate base course at approaches. Type I-A or I-D geotextile fabric per FP-03 Specifications should be attached to the core of geocomposite drains. Place Type I-B or I-E geotextile fabric between the on-site soil backfill material and the select granular borrow for separation/filtration.


Ground and Surface Water Management: On-site soils can be very susceptible to disturbance following contact with water. Control of storm water or seepage water flowing into open excavations may be necessary in order to retain the integrity of the natural bearing soils. The contractor should control the flow of surface water and seepage water into excavations at all times. Storm water collection and control during construction may be performed using collection trenches and sumps, if accumulation does occur.

DISCLAIMER/LIMITATIONS CLAUSE

The subsurface exploration and tests described in the Section on Procedures and Results have been conducted in accordance with standard practices and procedures (except as specifically noted). The results of these explorations and tests represent conditions at the specific locations indicated. Subsurface conditions between these locations may vary. The Analysis and Conclusions Section and the Recommendations Section in this report include interpretations and recommendations developed by the Government in the process of preparing the design. These interpretations are not intended as a substitute for the personal investigation, independent interpretation, and judgment of the Contractor.



Prepared by:
Mounir Abouzakhm, P.E.
Geotechnical Engineer



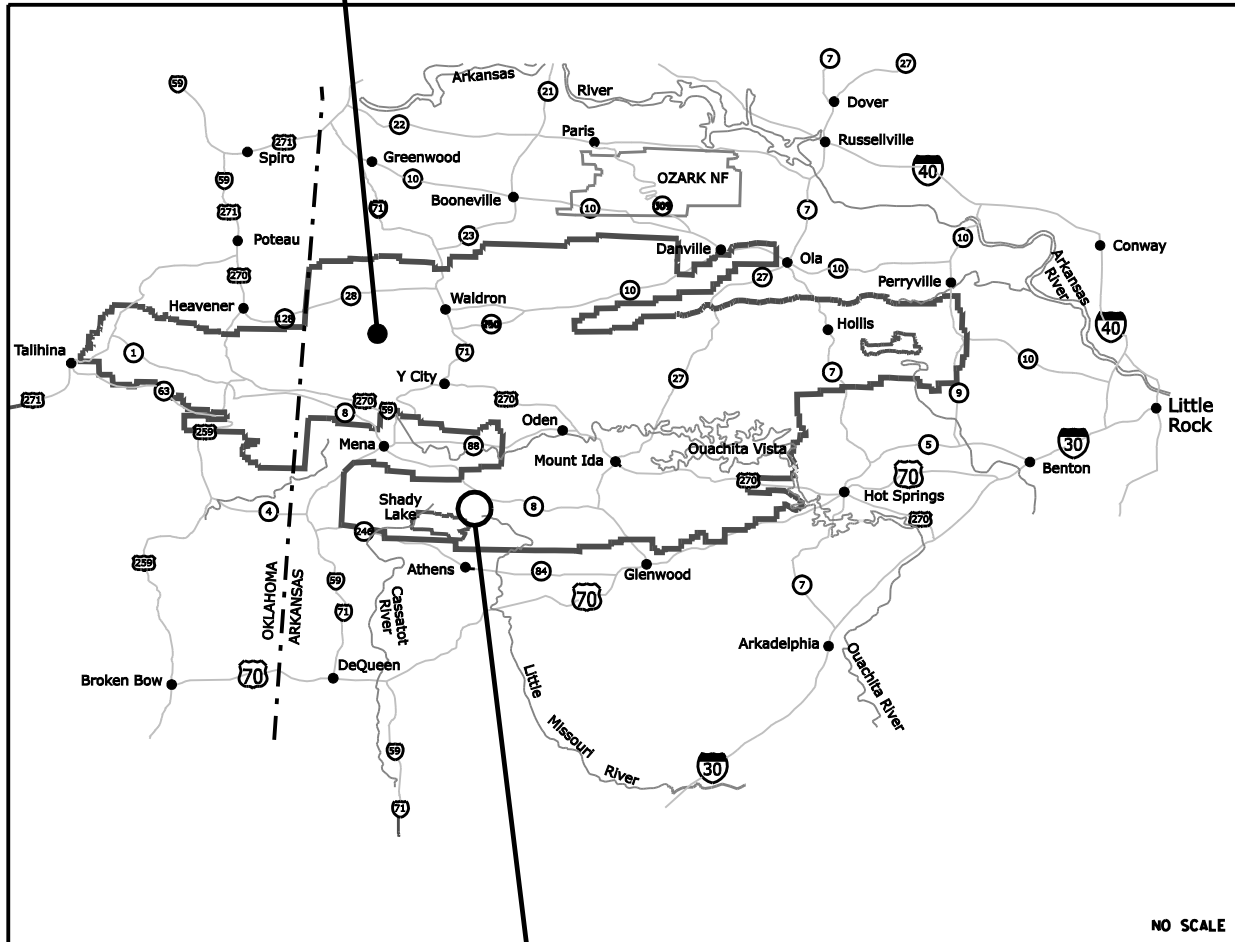
Reviewed by:
Khalid Mohamed, P.E.
Division Geotechnical Engineer

APPENDIX A

Figures

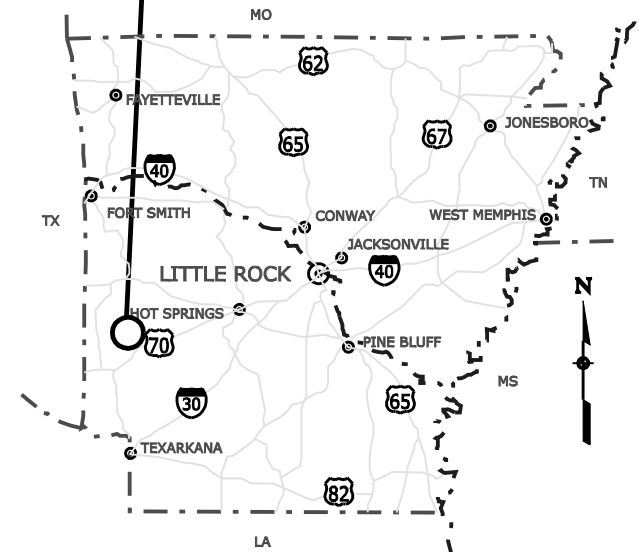
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8	AR	AR-PFH 159(I)	

OUACHITA NATIONAL FOREST



AR PFH 159(I)

AR PFH 159(I)



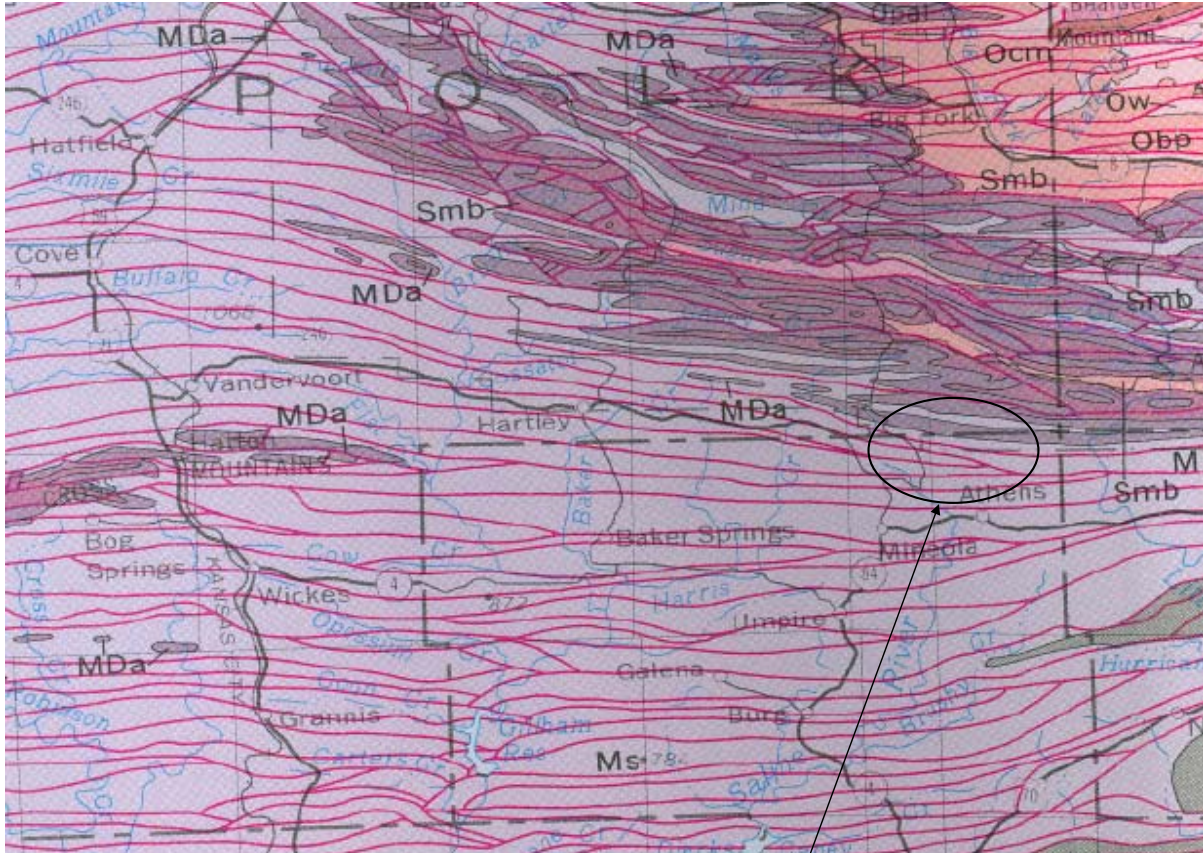
KEY MAP
STATE OF ARKANSAS

0 30 60
SCALE IN MILES

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STERLING, VIRGINIA

OUACHITA NATIONAL FOREST

LOCATION MAP



Project AR PFH 159(1)

- Smb MISSOURI MOUNTAIN SHALE AND BLAY LOCK SANDSTONE

- Opb POLK CREEK SHALE AND BIGFORK CHERT

- Pj JACKFORK SANDSTONE

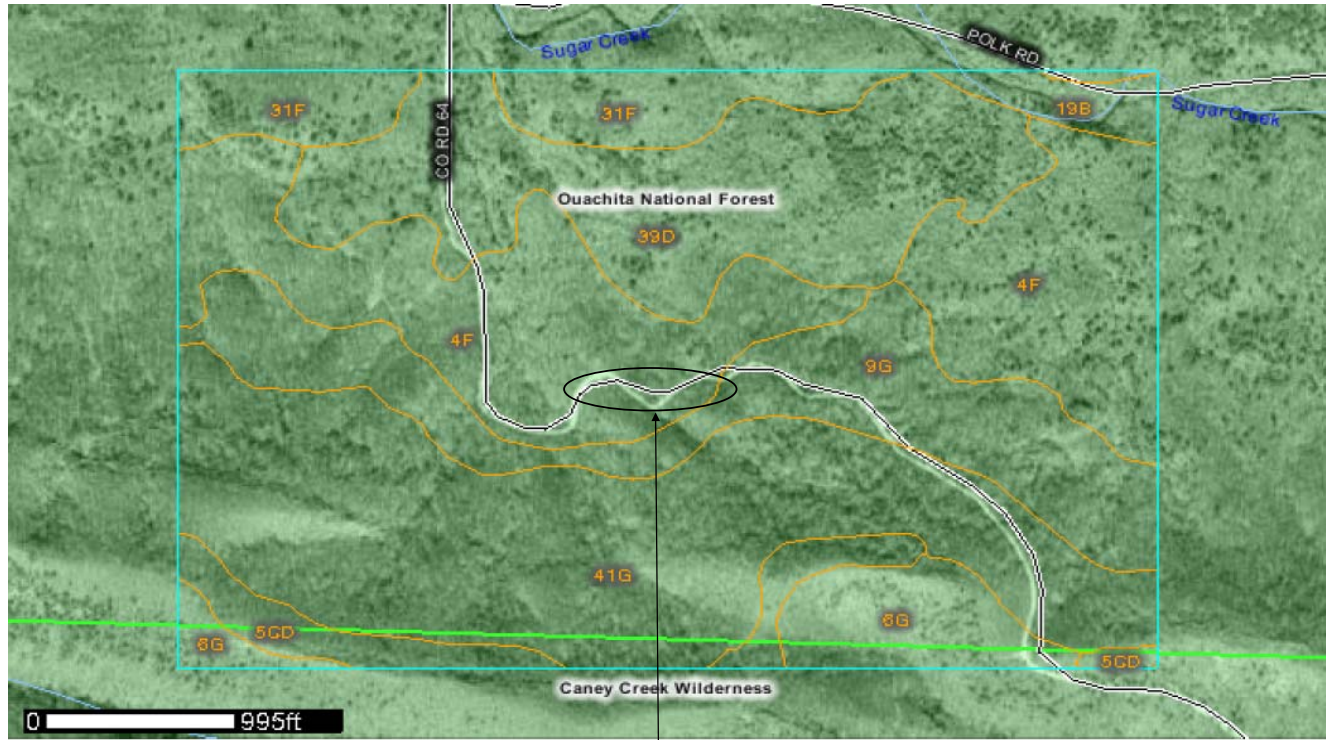
- Ms STANLEY SHALE

- MDa ARKANSAS NOVACULITE

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EASTERN FEDERAL LANDS HIGHWAY DIVISION
STERLING, VIRGINIA

FIGURE 2
Geologic Map

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	AR	AR PFH 159(1)	2	3



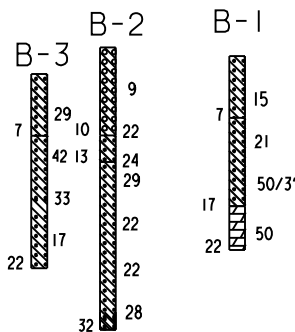
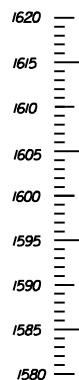
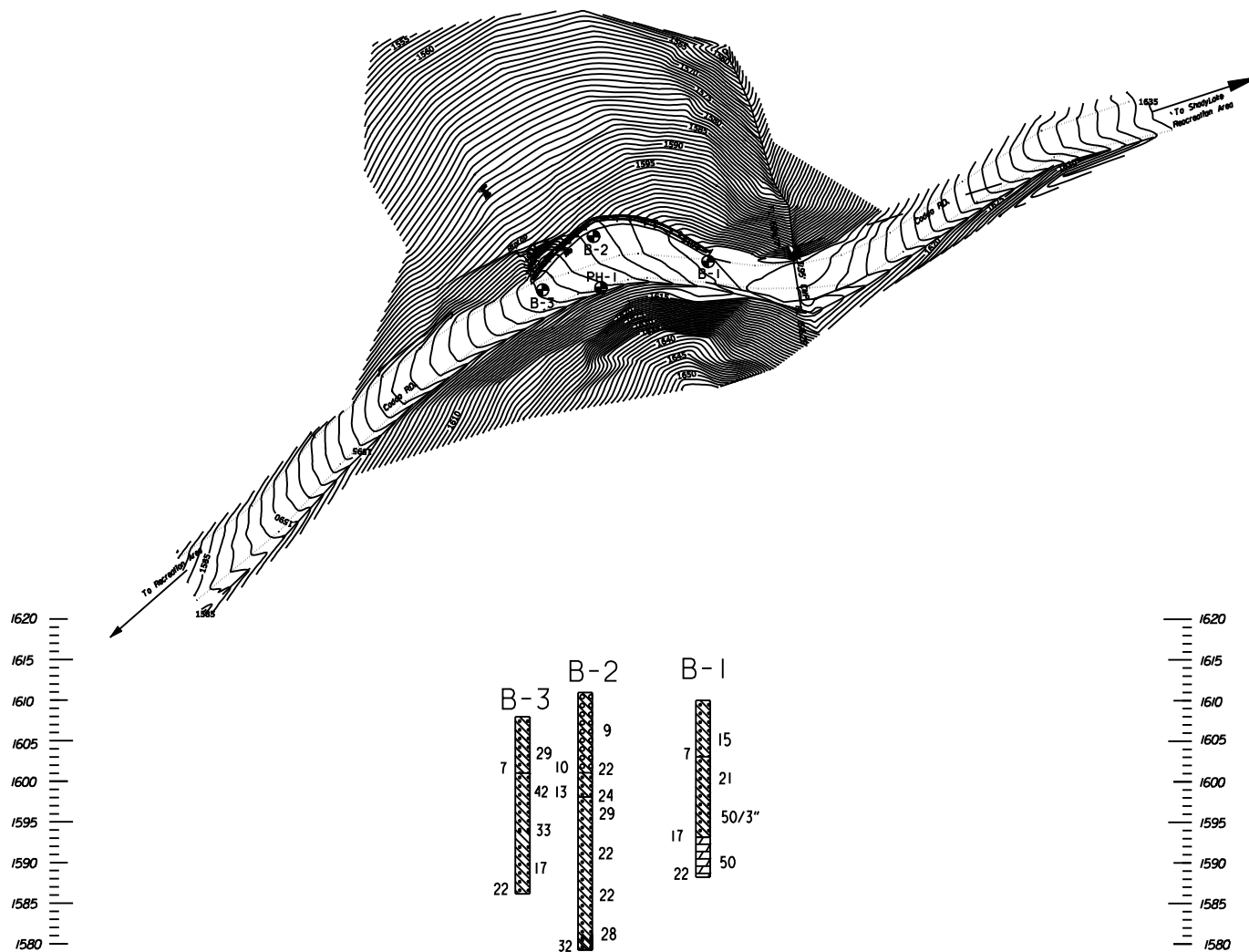
PROJECT: AR PFH 159(1)

4F: Bengal-Bismarck-Yanush complex, 15 to 35 percent slopes

9G: Bismarck-Bengal-Bigfork complex, 35 to 60 percent slopes, extremely stony

APPENDIX B
Boring Location Plan and Subsurface Profile

REG	STATE	PROJECT	SHEET NO.	TOTAL SHEETS
	AR	AR PFH 159(1)		



ELEVATION

THE BORING LOGS ON THIS SHEET REPRESENT THE SUBSURFACE CONDITIONS ENCOUNTERED AT THE BORING LOCATIONS SHOWN. SUBSURFACE CONDITIONS MAY VARY BETWEEN THESE LOCATIONS.

SYMBOL	TYPE OF MATERIAL	SYMBOL	TYPE OF MATERIAL	TEST BORING	MISCELLANEOUS
	GRAVEL PAVEMENT		CLAY W/ CHERT GRAVEL LAYERS	BORING NUMBER B-N WATER LEVEL (RL) (24 HOURS) WATER LEVEL (RL) (TIME OF DRILLING) DEPTH MARKS BHT OR BHR N BLOWS/12" (SPT) J-N JAR SAMPLE NO. CR% ROD N N N	1. SPT - STANDARD PENETRATION TEST - AASHTO T206-74 2. R - REFUSAL, SPT 100 BLOWS/12" 3. CR% - PERCENT OF RECOVERY 4. ROD - ROCK QUALITY DESIGNATION 5. BHT - BORE HOLE TERMINATED 6. BHR - BORE HOLE REFUSAL 7. GEOPHYSICAL TEST SITE: SEISMIC
	GRAVEL		BOULDERS		SCALE 0 100 SCALE IN FEET
	SILT and SAND		BEDROCK		RESISTIVITY S R
	SANDY CLAY				
	SILTY SAND				
	CLAYEY SILT				
	CLAY				

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STERLING, VIRGINIA

BORING LOCATION PLAN
AND SUBSURFACE PROFILE

BUCKEYE VISTA

PROJECT AR PFH 159(1)
GEOTECHNICAL REPORT NO. 07-04

APPENDIX C

Boring Logs

ROCK CORING GENERAL NOTES

Depth and Elevation: Use large marks as 1' (300mm) increments. Record proper elevations.

Core: Draw sketch of core breaks as it is oriented in the core box (align all core breaks so they fit together properly before drawing sketch). Starting at the top of core, measure each piece of core down its centerline to 1/100 of a foot. Record this measurement along the left side of the core sketch at the break.

VISUAL METHODS FOR ROCK IDENTIFICATION

- Description:**
1. Draw a heavy line through description at depth to which core run penetrated.
 2. Describe the rock type.
 3. Note the condition of the core break on the right side of the core sketch
Mud seam (MS); Sand seam (SS); Weathered surface (WS); Fresh break (FB)
 4. Record coring time in minutes.
 5. Record to nearest 1/100 foot the core recovered (after alignment in core box). Discard any debris at top of core, which obviously fill into the core hole.
 6. Calculate per cent core recovery and record: $CR = \frac{\text{feet of core recovered}}{\text{feet cored}}$
 7. Rock Quality Designation (RQD)

$$(RQD) = \frac{\sum [\text{Lengths of all pieces of the core} \geq 4" (100mm)]}{\text{Total length of core run}} \times 100$$

Hardness:

Very Soft (VS)	Can be deformed or crumbled by hand;
Soft (S)	Can be scratched with a fingernail
Moderately Hard (MH)	Can be scratched easily with a knife;
Hard (H)	Can be scratched with difficulty with a knife;
Very hard (VH)	Cannot be scratched with a knife

Color: Wet the rock with water and describe the color including the color of any unusual or reoccurring markings on the core (i.e. light green with dark green bands, foliation lines).

Soundness: Use the proper number 1 through 4

- | | |
|--------------------------------|-------------------|
| 1. Weathered | RQD = 0% to 25% |
| 2. Highly jointed to Jointed | RQD = 25% to 50% |
| 3. Jointed to Relatively sound | RQD = 50% to 75% |
| 4. Relatively sound to Sound | RQD = 75% to 100% |

Main Rock Formation Name

Texture

Very Fine (VF),
Fine (F),
Medium (M),
Course (C)

Modifying Term

“and”	40% to 50% of the core run
“some”	30% to 40%
“little”	10% to 30%
“trace”	10% or less

Minor Rock Type(s)

Other

Foliation: Foliation planes are parallel planes of different minerals forming a banded appearance on the rock. The foliation planes are usually of a different color than the surrounding rock. Also the rock shears along the foliation planes if struck with a hammer. Record the following:

Close spaced (CS) – 1/8" (3mm) or closer; Medium spaced (MS) – 1/8" to 1/4" (3mm to 6mm); Open spaced (OS) – 1/4" (6mm) or larger

The angle to the horizontal should be measured (with a protractor) and recorded for the rock core. (Several different angles can be found in each 5' to 10' core.)

Weathering: Use the proper number 1 through 5.

1. Unweathered: No evidence of any mechanical or chemical alteration along discoloration evidenced.
2. Slightly weathered: Discoloration is evident, on surface, slight alteration no discontinuities, less than 10% of the volume is altered, strength is substantially unaffected.
3. Moderately weathered: Discoloring is evident, surface is pitted and altered with alteration penetrating well below rock surfaces, weathering "halos" evident, 10% to 50% of the rock is altered, strength is noticeably less than fresh rock.
4. Highly weathered: Entire mass is discolored; alteration pervades nearly all of the rock with some pockets of slightly weathered rock noticeable, some minerals leached away, retains only a fraction of original strength (with wet strength usually lower than dry strength).
5. Decomposed: Rock is reduced to a soil with relict rock structure (saprolite), can be generally molded and crumbled by hand.

Recovery Core Recovery

Rock Quality: Use the proper number 1 through 5

- | | | |
|----|-----------|-------------------|
| 1. | Very Poor | RQD = 0% to 25% |
| 2. | Poor | RQD = 25% to 50% |
| 3. | Fair | RQD = 50% to 75% |
| 4. | Good | RQD = 75% to 90% |
| 5. | Excellent | RQD = 90% to 100% |

Examples:

1. Moderately hard, blue-gray to gray, weathered **BIOTITE GNEISS BOULDER**, medium texture

Recovery = 24%
RQD = 17%

2. Very hard, gray and white, relatively sound to sound **BIOTITE GNEISS**, medium to fine texture, some quartz veins, foliation angle = 20 degrees

Recovery = 100%
RQD = 100%

-Fresh break @ approximately 47'



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISIONProject Name: AR PFH 159(1) Boring No.: B-1 Sheet: 1 of 1Project Location: Buckeye Vista Overlook Boring Location: Overlook

Groundwater Depth: _____ Surface Elevation: 1609.7 ft Boring Began: 11/1/06 Completed: 11/1/06
Encountered at: ▽ Caved at: _____ Boring Method: HSA Inspector: K.Thornton
At Completion: ▽ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R.Kingsley
After _____ hrs ▽ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: Cloudy

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ——— Liquid Limit ● Standard Penetration Test Data (Blows / ft) 10 20 40 60 80				
					Type	No.	Rec.	Blows per 6 in.					
1602.7		7.0	Medium dense, brown to orange brown, CLAYEY SAND , little silt and gravel [A-6(3)] Fill (Dry)	5	J-1	1.2	6-7-8-10	▼ ●					
1592.7		17.0	Very stiff to hard, brown to orange brown, SANDY LEAN CLAY , trace gravel and some silt [A-6(5)] (Dry)	10	J-2	0.9	8-10-11-13	●					
1592.7		17.0		15	J-3		46-50/3"					3"	
1587.7		22.0	Orange brown and light gray, DECOMPOSED ROCK (Dry) Hard drilling @ 20 ft	20	J-4	0.9	27-50						
			Boring was terminated at 22 ft	25									
				30									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT UD
 Penetrometer
 Rock CoreRemarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISIONProject Name: AR PFH 159(1) Boring No.: B-2 Sheet: 1 of 2Project Location: Buckeye Vista Overlook Boring Location: OverlookGroundwater Depth: _____ Surface Elevation: 1610.7 ft Boring Began: 10/31/06 Completed: 10/31/06Encountered at: ▽ Caved at: _____ Boring Method: HSA Inspector: K.Thornton/A.AndersonAt Completion: ▽ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R.KingsleyAfter _____ hrs ▽ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: Cloudy

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ——— Liquid Limit ● Standard Penetration Test Data (Blows / ft) 10 20 40 60 80				
					Type	No.	Rec.	Blows per 6 in.					
			Loose, brown to orange brown, CLAYEY GRAVEL , little sand and silt [A-2-4(0)]										
			Fill										
			(Dry)										
				5									
					J-1		0.9	3-4-5-8		▼			
1600.7		10.0	Very stiff, brown to orange brown, SANDY LEAN CLAY , trace gravel and some silt [A-6(5)]	10		J-2	0.8	7-9-13-15		▼	●		
			(Dry)										
1597.7		13.0	Medium dense, brown to orange brown, CLAYEY SAND , little silt and gravel [A-2-6(1)]	15		J-3	1.2	8-11-13-17			●		
			(Dry)			J-4	0.9	8-14-15-16			●		
			Hard drilling @ 19 ft	20		J-5	1.0	10-12-10-15		▼	●		
				25		J-6	1.2	8-8-14-17			●		
				30									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT UD
 Penetrometer
 Rock CoreRemarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: AR PFH 159(1) Boring No.: B-2 Sheet: 2 of 2

Project Location: Buckeye Vista Overlook Boring Location: Overlook

Groundwater Depth: _____ Surface Elevation: 1610.7 ft Boring Began: 10/31/06 Completed: 10/31/06

Encountered at: ∇ Caved at: _____ Boring Method: HSA Inspector: K.Thornton/A.Anderson

At Completion: _____ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R.Kingsley

After _____ hrs _____ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: Cloudy

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ——— Liquid Limit				
					Type	No.	Rec.	Blows per 6 in.	● Standard Penetration Test Data (Blows / ft)				
1578.7		32.0	Trace gravel and little silt [A-6(2)]		J-7	1.6	11-11-17-17		10	20	40	60	80
			Boring was terminated at 32 ft	35									
				40									
				45									
				50									
				55									
				60									

Sample Types:
 Auger Cuttings
 Vane Shear
 SPT

UD
 Penetrometer
 Rock Core

Remarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Project Name: AR PFH 159(1) Boring No.: B-3 Sheet: 1 of 1

Project Location: Buckeye Vista Overlook Boring Location: Overlook

Groundwater Depth: Surface Elevation: 1608.1 ft Boring Began: 11/1/06 Completed: 11/1/06
Encountered at: ☒ Caved at: Boring Method: HSA Inspector: K.Thornton
At Completion: ☒ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R.Kingsley
After hrs ☒ Hammer Drop: 30 in. Rock Core Diam: Weather: Cloudy

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ——— Liquid Limit ● Standard Penetration Test Data (Blows / ft) 10 20 40 60 80				
					Type	No.	Rec.	Blows per 6 in.					
1601.1		7.0	Very stiff, brown to orange brown, SANDY LEAN CLAY , trace gravel and some silt [A-6(5)] (Dry)	5	J-1	1.5	10-14-15-20						
			Medium dense to dense, brown to orange brown and gray, CLAYEY SAND some gravel and little silt [A-2-6 (1)] Dry	10	J-2	1.7	17-21-21-22						
			Hard drilling @ 13 ft	15	J-3	1.5	16-16-17-17						
1586.1		22.0	Boring was terminated at 22 ft	20	J-3	1.5	7-8-9-15						
				25									
				30									

Sample Types:
☒ Auger Cuttings
☒ Vane Shear
☒ SPT☒ UD
☒ Penetrometer
☒ Rock CoreRemarks:
- No water was encountered during or after drilling.



BORING LOG

U. S. DEPARTMENT OF TRANSPORTATION

FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISIONProject Name: AR PFH 159(1) Boring No.: PH-1 Sheet: 1 of 1Project Location: Buckeye Vista Overlook Boring Location: OverlookGroundwater Depth: _____ Surface Elevation: 1610.0 ft Boring Began: 11/1/06 Completed: 11/1/06Encountered at: ▽ Caved at: _____ Boring Method: HSA Inspector: K.ThorntonAt Completion: ▽ Hammer Wt. & Type: 140 lbs/Auto Hole Diameter: 8.0 in. Operator: R.KingsleyAfter _____ hrs ▽ Hammer Drop: 30 in. Rock Core Diam: _____ Weather: Cloudy

Elevation (feet)	Graphic Log	Layer Depth (ft)	MATERIAL DESCRIPTION Density, Color, Plasticity, Size, Proportions, Moisture	Depth Scale (ft)	SAMPLE				▼ Water Content % Plastic Limit ——— Liquid Limit ● Standard Penetration Test Data (Blows / ft) 10 20 40 60 80				
					Type	No.	Rec.	Blows per 6 in.					
1603.0		7.0	Brown to orange brown, CLAYEY SAND little silt and gravel [A-6(3)] Fill (Dry)	5									
1597.0		13.0	Brown to orange brown, SANDY LEAN CLAY trace gravel and some silt [A-6(5)] (Dry)	10									
1590.0		20.0	Brown to orange brown, CLAYEY SAND some gravel and little silt [A-2-6(1)] (Dry)	15									
1585.0		25.0	Orange brown and light gray, DECOMPOSED ROCK Hard drilling 22-25 ft	20									
			Boring was terminated at 25 ft	25									
				30									

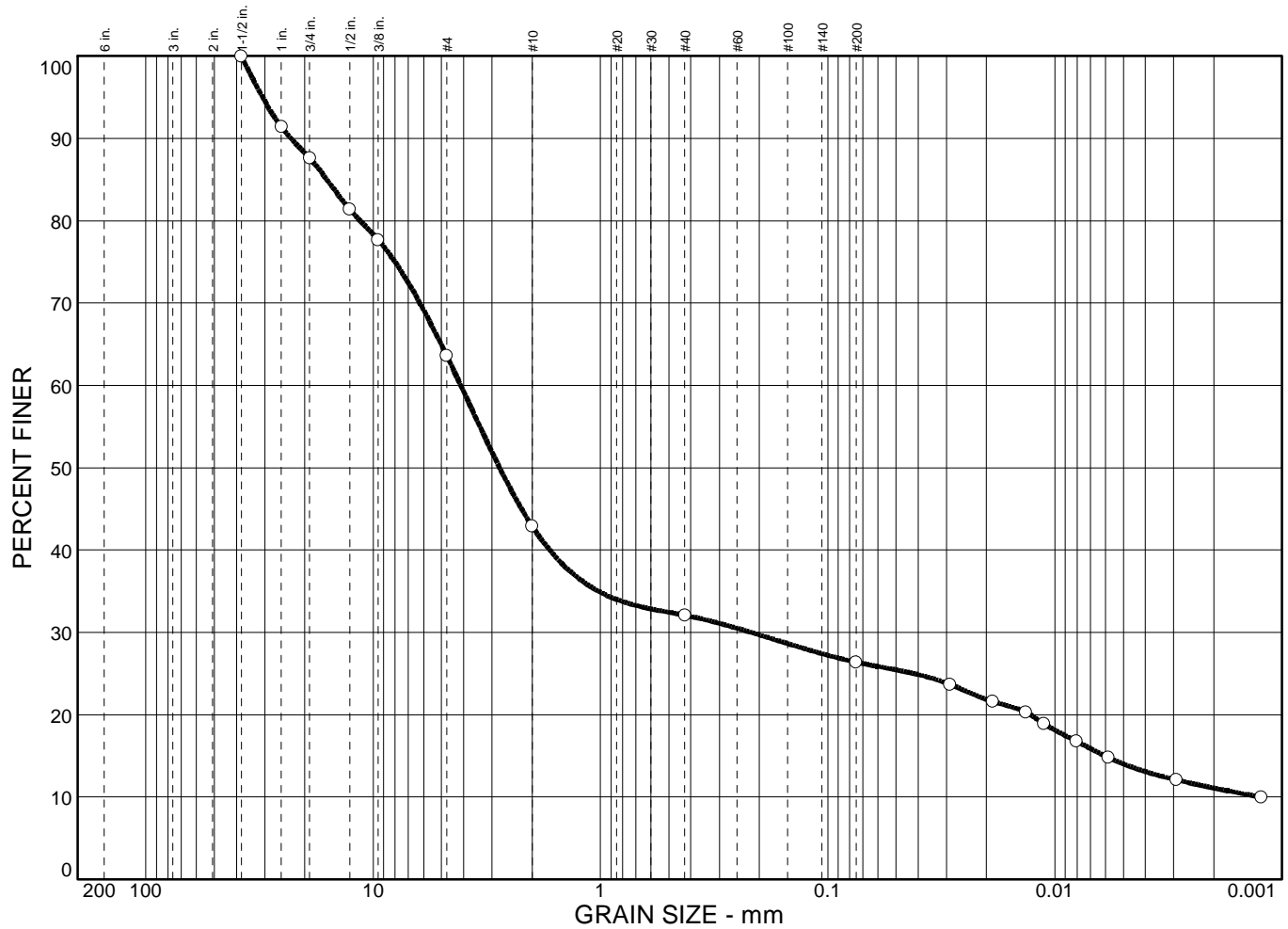
Sample Types:
 Auger Cuttings
 Vane Shear
 SPT UD
 Penetrometer
 Rock CoreRemarks:
- No water was encountered during or after drilling.

APPENDIX D
Laboratory Test Data

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○		B-1/J-1	5.0-7.0	Clayey sand	A-6(3)
□		B-2/J-1	0.0-5.0	Clayey gravel with sand	A-2-4(0)
△		B-2/J-3	10.0-12.0	Sandy lean clay	A-6(5)
◇		B-2/J-6	20.0-22.0	Clayey sand with gravel	A-2-6(1)
▽		B-2/J-8	30.0-32.0	Clayey sand	A-6(2)

Client: FHWA / EFLHD
Project: Buckeye Vista Overlook
Project No.: AR PFH 159(1)

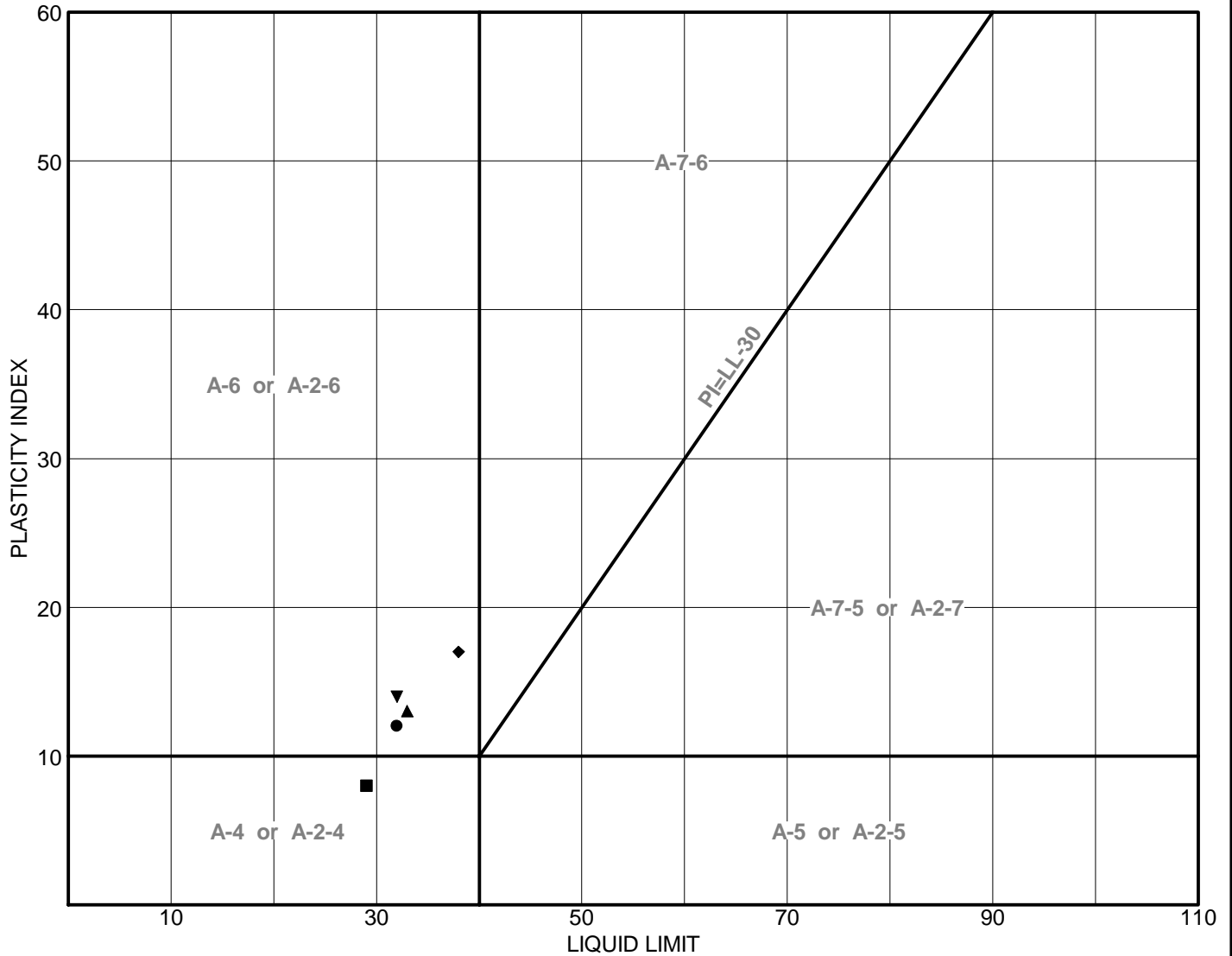
Particle Size Distribution Report



	% + 3"	% GRAVEL	% SAND	% SILT	% CLAY
○	0.0	36.4	37.2	12.4	14.0

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	DESCRIPTION	AASHTO
○		B-3/J-3	15.0-17.0	Clayey sand with gravel	A-2-6(1)

LIQUID AND PLASTIC LIMITS TEST REPORT



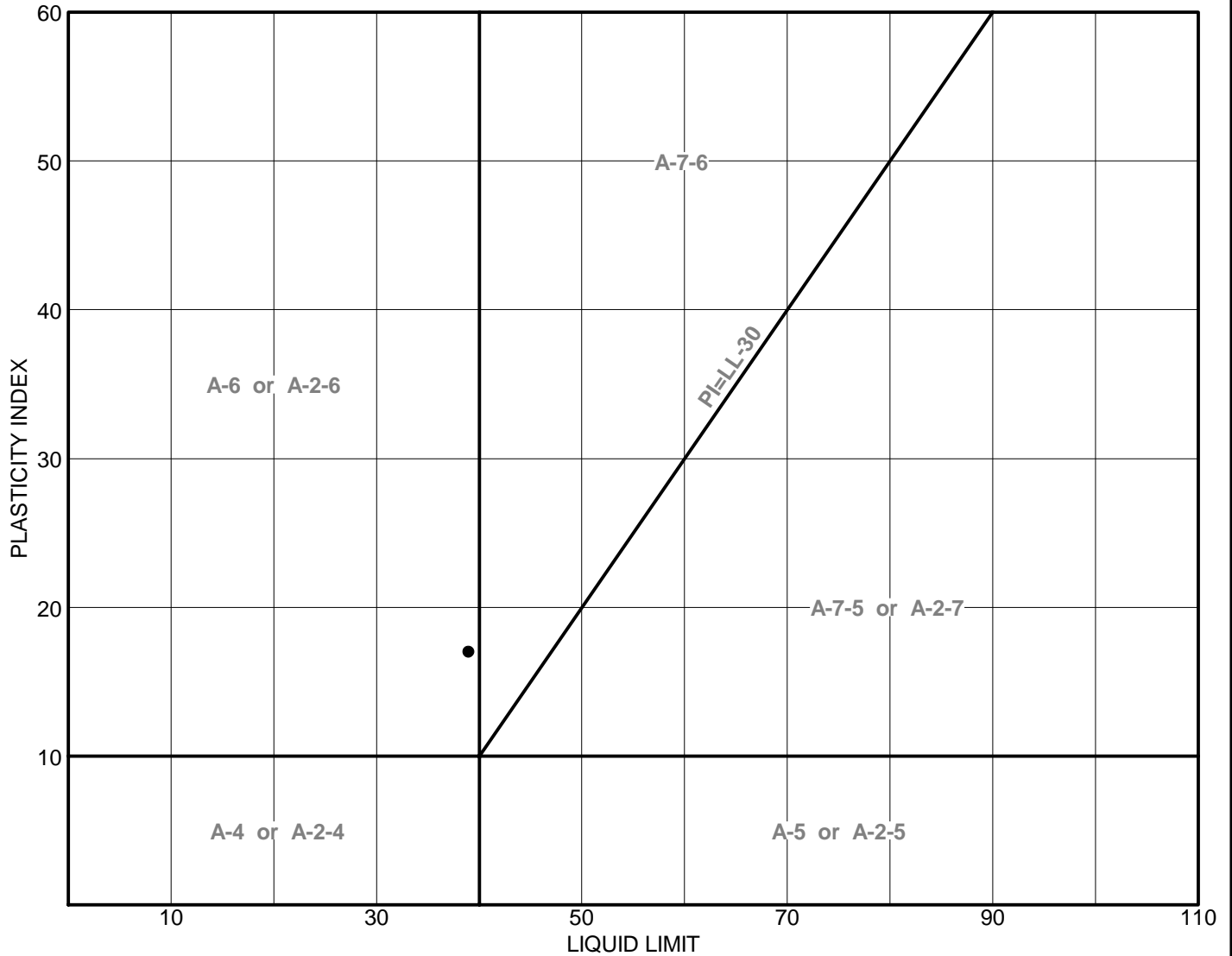
SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
●		B-1/J-1	5.0-7.0	9.2	20	32	12	A-6(3)
■		B-2/J-1	0.0-5.0	7.2	21	29	8	A-2-4(0)
▲		B-2/J-3	10.0-12.0	8.2	20	33	13	A-6(5)
◆		B-2/J-6	20.0-22.0	12.8	21	38	17	A-2-6(1)
▼		B-2/J-8	30.0-32.0	20.0	18	32	14	A-6(2)

LIQUID AND PLASTIC LIMITS TEST REPORT
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA / EFLHD
Project: Buckeye Vista Overlook
Project No.: AR PFH 159(1)

LIQUID AND PLASTIC LIMITS TEST REPORT



SOIL DATA

SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	NATURAL WATER CONTENT (%)	PLASTIC LIMIT (%)	LIQUID LIMIT (%)	PLASTICITY INDEX (%)	AASHTO
•		B-3/J-3	15.0-17.0	14.3	22	39	17	A-2-6(1)

LIQUID AND PLASTIC LIMITS TEST REPORT
FEDERAL HIGHWAY ADMINISTRATION
EASTERN FEDERAL LANDS HIGHWAY DIVISION

Client: FHWA / EFLHD
Project: Buckeye Vista Overlook
Project No.: AR PFH 159(1)

APPENDIX E
Computer Output (MSEW)

AASHTO DESIGN METHOD

Buckeye Vista Overlook

PROJECT IDENTIFICATION

Title: Buckeye Vista Overlook
Project Number: AR PFH 159(1)
Client: Ouachita National Forest
Designer: M.A.A
Station Number:

Description:

Company's information:

Name: EFLHD
Street: 21400 Ridgetop Circle

Sterling, VA 20166
Telephone #: (571) 434-1566
Fax #: (703) 404-6217
E-Mail: Mounir.Abouzakhm@fhwa.dot.gov

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Original date and time of creating this file: Wed Aug 22 08:57:14 2007

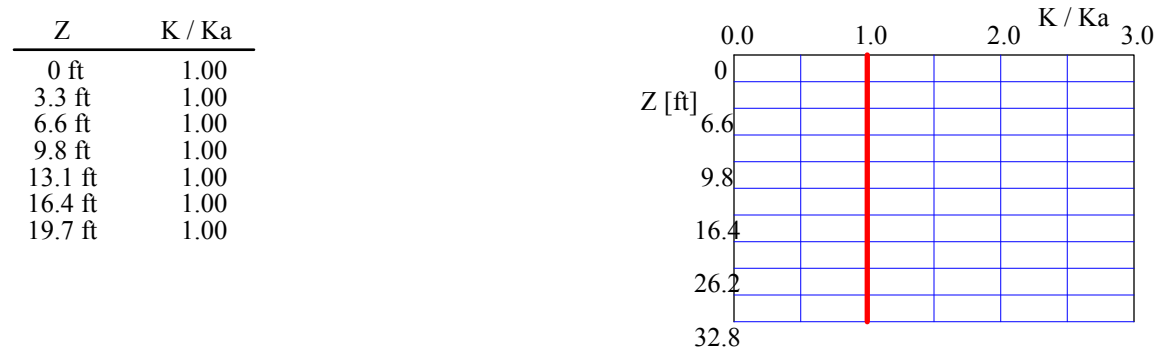
PROGRAM MODE:

ANALYSIS
of a SIMPLE STRUCTURE
using GEOGRID as reinforcing material.

INPUT DATA: Geogrids
(Analysis)

D A T A	Geogrid type #1	Geogrid type #2	Geogrid type #3	Geogrid type #4	Geogrid type #5
Tult [lb/ft]	16000.0				
Durability reduction factor, RFd	2.0				
Installation-damage reduction factor, RFid	3.00				
Creep reduction factor, RFC	2.50	N/A	N/A	N/A	N/A
Fs-overall for strength	N/A				
Coverage ratio, Rc	1.000				
Friction angle along geogrid-soil interface, ρ	21.33				
Pullout resistance factor, F*	0.80·tanφ	N/A	N/A	N/A	N/A
Scale-effect correction factor, α	0.8				

Variation of Lateral Earth Pressure Coefficient With Depth



[illegible][illegible]

MSEW -- Mechanically Stabilized Earth Walls

Buckeye Vista Overlook

Version Date/Time: Tue Aug 28 10:19:01 2007

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MSEW -- Mechanically Stabilized Earth Walls

Buckeye Vista Overlook

Version Date/Time: Tue Aug 28 10:19:01 2007

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[illegible][illegible]

MSEW -- Mechanically Stabilized Earth Walls

Buckeye Vista Overlook

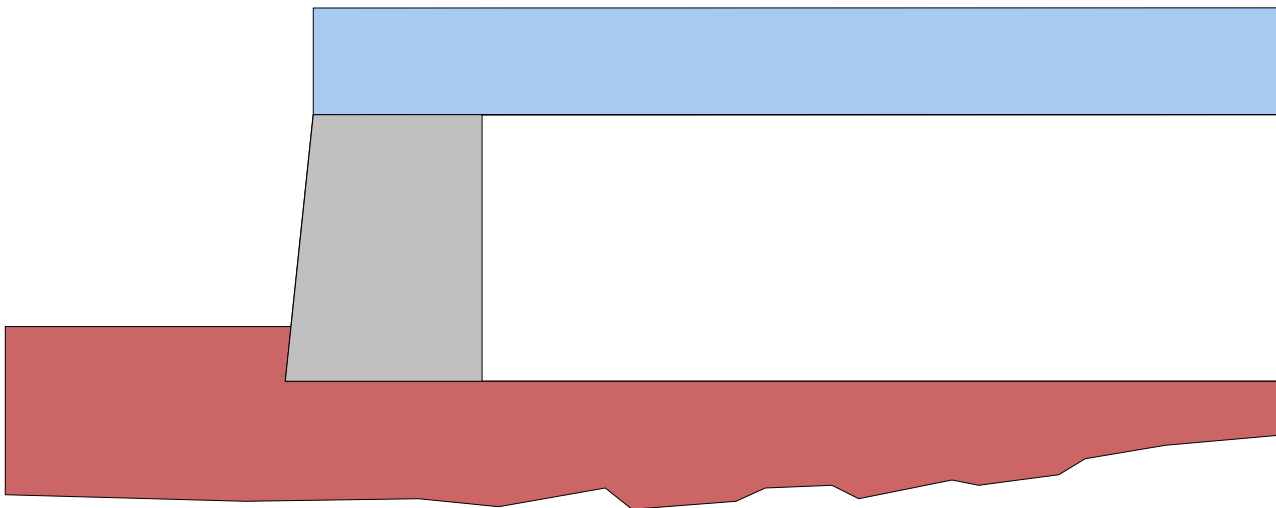
Version Date/Time: Tue Aug 28 10:19:01 2007

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BEARING CAPACITY for GIVEN LAYOUT

	STATIC	SEISMIC	UNITS
(Water table does not affect bearing capacity)			
Ultimate bearing capacity, q_{ult}	16474	N/A	[lb/ft ²]
Meyerhof stress, σ_v	1987.0	N/A	[lb/ft ²]
Eccentricity, e	0.94	N/A	[ft]
Eccentricity, e/L	0.104	N/A	
F_s calculated	8.29	N/A	
Base length	9.00	N/A	[ft]



SCALE:



RESULTS for STRENGTH

#	Geogrid Elevation [ft]	Tavailable [lb/ft]	Tmax [lb/ft]	Tmd [lb/ft]	Specified minimum Fs-overall static	Actual calculated Fs-overall static	Specified minimum Fs-overall seismic	Actual calculated Fs-overall seismic	Product name
1	0.60	1067	677.37	N/A	N/A	1.575	N/A	N/A	---
2	2.10	1067	673.82	N/A	N/A	1.583	N/A	N/A	---
3	3.60	1067	590.86	N/A	N/A	1.805	N/A	N/A	---
4	5.10	1067	507.90	N/A	N/A	2.100	N/A	N/A	---
5	6.60	1067	424.94	N/A	N/A	2.510	N/A	N/A	---
6	8.10	1067	443.22	N/A	N/A	2.407	N/A	N/A	---
7	10.66	1067	362.98	N/A	N/A	2.939	N/A	N/A	---

RESULTS for PULLOUT

#	Geogrid Elevation [ft]	Coverage Ratio	Tmax [lb/ft]	Tmd [lb/ft]	Le [ft]	La [ft]	Avail.Static Pullout, Pr [lb/ft]	Specified Static Fs	Actual Static Fs	Avail.Seism. Pullout, Pr [lb/ft]	Specified Seismic Fs	Actual Seismic Fs
1	0.60	1.000	677.4	N/A	8.73	0.27	10854.5	N/A	16.025	N/A	N/A	N/A
2	2.10	1.000	673.8	N/A	8.06	0.94	9389.3	N/A	13.935	N/A	N/A	N/A
3	3.60	1.000	590.9	N/A	7.38	1.62	7568.4	N/A	12.809	N/A	N/A	N/A
4	5.10	1.000	507.9	N/A	6.71	2.29	5910.9	N/A	11.638	N/A	N/A	N/A
5	6.60	1.000	424.9	N/A	6.04	2.96	4450.6	N/A	10.474	N/A	N/A	N/A
6	8.10	1.000	443.2	N/A	5.36	3.64	3181.3	N/A	7.178	N/A	N/A	N/A
7	10.66	1.000	363.0	N/A	4.21	4.79	1462.6	N/A	4.030	N/A	N/A	N/A

RESULTS for CONNECTION (static conditions)

#	Geogrid Elevation [ft]	Connection force, To [lb/ft]	Reduction factor for connection break, CRu	Reduction factor for connection pullout, CRs	Available connection strength, Tc-break criterion [lb/ft]	Available connection strength, Tc-pullout criterion [lb/ft]	Available Geogrid strength, Tavailable [lb/ft]	Fs-overall connection break		Fs-overall connection pullout		Fs-overall Geogrid strength		Product name
								Specified	Actual	Specified	Actual	Specified	Actual	
1	0.60	677	0.90	N/A	1440	N/A	1067	N/A	2.13	N/A	N/A	N/A	1.57	---
2	2.10	674	0.90	N/A	1440	N/A	1067	N/A	2.14	N/A	N/A	N/A	1.58	---
3	3.60	591	0.90	N/A	1440	N/A	1067	N/A	2.44	N/A	N/A	N/A	1.81	---
4	5.10	508	0.90	N/A	1440	N/A	1067	N/A	2.84	N/A	N/A	N/A	2.10	---
5	6.60	425	0.90	N/A	1440	N/A	1067	N/A	3.39	N/A	N/A	N/A	2.51	---
6	8.10	443	0.90	N/A	1440	N/A	1067	N/A	3.25	N/A	N/A	N/A	2.41	---
7	10.66	363	0.90	N/A	1440	N/A	1067	N/A	3.97	N/A	N/A	N/A	2.94	---

APPENDIX F
Computer Output (ReSSA)

INPUT DATA (EXCLUDING REINFORCEMENT LAYOUT)

SOIL DATA

SOIL DATA		Unit weight, γ	Internal angle of friction, ϕ	Cohesion, c
===== Soil Layer #: =====	[lb/ft ³]	[deg.]	[lb/ft ²]	
REINFORCED SOIL.....	120.0	32.0	0.0	
RETAINED SOIL.....	120.0	30.0	0.0	
FOUNDATION SOIL.....	120.0	32.0	100.0	

REINFORCEMENT

Reinforcement		Ultimate Strength, Tult [lb/ft]	Reduction Factor for Installation Damage, RFid	Reduction Factor for Durability, RFd	Reduction Factor for Creep, RFc	Coverage Ratio, Rc
Type #	Geosynthetic Designated Name					
1	Geosynthetic type #1	6851.90	1.20	1.10	1.67	1.00

Interaction Parameters		== Direct Sliding ==		==== Pullout ====	
Type #	Geosynthetic Designated Name	Cds-phi	Cds-c	Ci	Alpha
1	Geosynthetic type #1	0.80	0.00	0.80	0.80

Relative Orientation of Reinforcement Force, ROR = 1.00. Assigned Factor of Safety to resist pullout, F_{s-po} = 1.50

WATER

Water is not present

SEISMICITY

Not Applicable

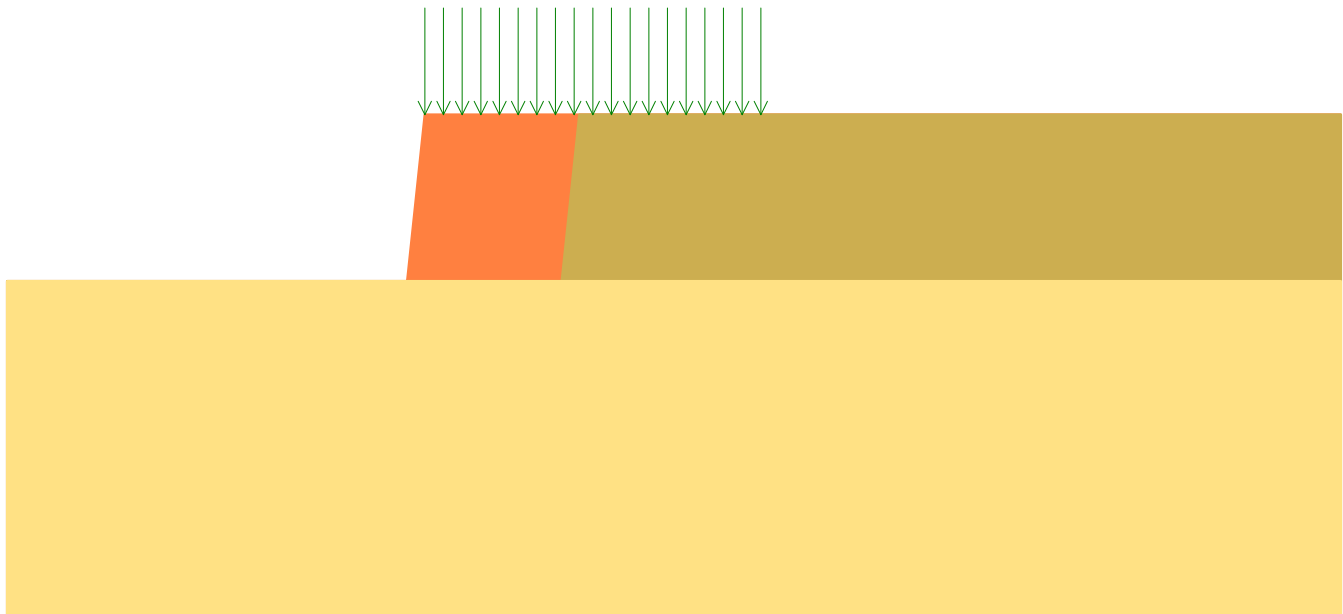
DRAWING OF SPECIFIED GEOMETRY - SIMPLE

GEOMETRY

Height of slope, H	9.70 [ft]
Slope angle, i	84.00 [deg.]
Horizontal crest length, A	20.00 [ft]
Horizontal crest length, B	20.00 [ft]
Backslope angle, β	0.00 [deg.]
Sloping angle, α	0.00 [deg.]

UNIFORM SURCHARGE

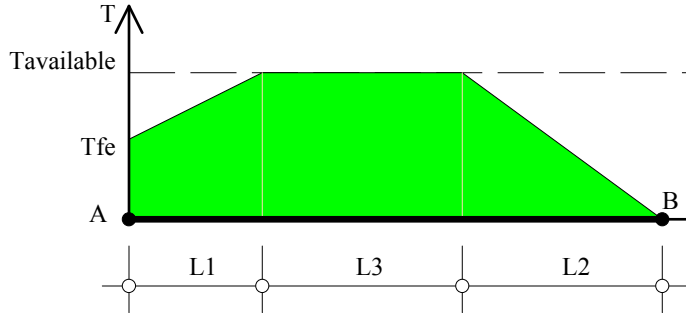
Surcharge load over A, Q1.....	250.00	[lb/ft ²]
Surcharge load over backslope B, Q2.....	0.00	[lb/ft ²]
Surcharge load away from backslope, Q3.....	0.00	[lb/ft ²]



SCALE:



DISTRIBUTION OF AVAILABLE STRENGTH ALONG EACH REINFORCEMENT LAYER



A = Front-end of reinforcement (at face of slope)
 B = Rear-end of reinforcement
 AB = $L_1 + L_2 + L_3$ = Embedded length of reinforcement

T_{available} = Long-term strength of reinforcement
T_{fe} = Available front-end strength (e.g., connection to facing)

L1 = Front-end 'pullout' length
L2 = Rear-end pullout length
Tavailable prevails along L3

Factor of safety on resistance to pullout on either end of reinforcement, $F_{s-po} = 1.50$

Reinforcement Layer #	Designated Name	Height Relative to Toe [ft]	L [ft]	L1 [ft]	L2 [ft]	L3 [ft]	Tfe [lb/ft]	Tavailable [lb/ft]
1	Geosynthetic type #1	0.60	9.00	0.00	5.35	3.65	3108.28	3108.28
2	Geosynthetic type #1	2.10	9.00	0.00	6.40	2.60	3108.28	3108.28
3	Geosynthetic type #1	3.60	9.00	0.00	7.97	1.03	3108.28	3108.28
4	Geosynthetic type #1	5.10	9.00	0.00	9.00	0.00	2572.84	2572.84 (*)
5	Geosynthetic type #1	6.60	9.00	0.00	9.00	0.00	1749.44	1749.44 (*)
6	Geosynthetic type #1	8.10	9.00	0.00	9.00	0.00	910.93	910.93 (*)
7	Geosynthetic type #1	9.60	9.00	0.00	9.00	0.00	57.31	57.31 (*)

(*) This Tavailable is dictated by the pullout resistance capacity, which is smaller than the long-term strength of the reinforcement that is related to its specified ultimate strength

RESULTS OF ROTATIONAL STABILITY ANALYSIS

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.) The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each entry point (considering all specified exit points)									
Entry Point #	Entry Point (X , Y) [ft]		Exit Point (X , Y) [ft]		Critical Circle (Xc , Yc , R) [ft]			Fs	STATUS
1	10.00	9.70	-8.10	0.06	-1.65	9.78	11.66	2.14	OK
2	11.40	9.70	-8.01	0.01	-1.04	10.33	12.46	1.93	
3	12.80	9.70	-8.01	0.01	-0.75	11.61	13.69	1.85	
4	14.20	9.70	-8.03	0.01	-1.03	14.30	15.91	1.81	
5	15.60	9.70	-8.25	0.11	-0.83	16.11	17.64	1.82	
6	17.00	9.70	-10.06	0.03	-1.22	18.00	20.03	1.84	
7	18.40	9.70	-10.23	0.10	-1.21	20.70	22.49	1.87	
8	19.80	9.70	-10.05	0.02	-1.30	23.90	25.44	1.91	
9	21.20	9.70	-10.25	0.08	-1.26	26.91	28.29	1.97	
10	22.60	9.70	-10.10	0.03	-1.29	30.37	31.59	2.08	
11	24.00	9.70	-10.25	0.06	-1.43	34.39	35.44	2.19	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-entry' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

Results in the tables below represent critical circles identified between specified points on entry and exit. (Theta-exit set to 50.00 deg.) The most critical circle is obtained from a search considering all the combinations of input entry and exit points.

Critical circles for each exit point (considering all specified entry points)									
Exit Point #	Exit Point (X , Y) [ft]		Entry Point (X , Y) [ft]		Critical Circle (Xc , Yc , R) [ft]			Fs	STATUS
1	-20.23	0.12	18.40	9.70	-6.15	26.04	29.50	2.11	OK
2	-18.11	0.06	18.40	9.70	-5.01	24.42	27.66	2.03	
3	-16.33	0.19	17.00	9.70	-4.29	21.13	24.16	1.96	
4	-14.14	0.07	17.00	9.70	-3.29	20.15	22.82	1.91	
5	-12.23	0.12	15.60	9.70	-2.67	17.56	19.89	1.86	
6	-10.07	0.04	14.20	9.70	-1.85	14.71	16.81	1.83	
7	-8.03	0.01	14.20	9.70	-1.03	14.30	15.91	1.81	
8	-6.19	0.08	14.20	9.70	-0.17	13.74	14.93	1.83	
9	-4.18	0.07	14.20	9.70	0.74	13.03	13.87	1.89	
10	-2.14	0.02	15.60	9.70	0.78	15.78	16.02	1.96	
11	-0.01	0.00	17.00	9.70	0.33	19.17	19.17	1.97	

Note: In the 'Status' column, OK means the critical circle was identified within the specified search domain. 'On extreme X-exit' means that the critical result is on the edge of the search domain; a lower Fs may result if the search domain is expanded.

License number RS-FHWA-5002

ReSSA -- Reinforced Slope Stability Analysis Buckeye Vista Overlook

Present Date/Time: Tue Aug 28 10:16:29 2007 M:\Projects\fh\ar\159(1)\techserv\geotech\Analysis\A 9-1.5 ft 84 d 8-22.MSE

ReSSA -- Reinforced Slope Stability Analysis Buckeye Vista Overlook

Present Date/Time: Tue Aug 28 10:16:29 2007 M:\Projects\fh\ar\159(1)\techserv\geotech\Analysis\A 9-1.5 ft 84 d 8-22.MSE

ReSSA -- Reinforced Slope Stability Analysis Buckeye Vista Overlook

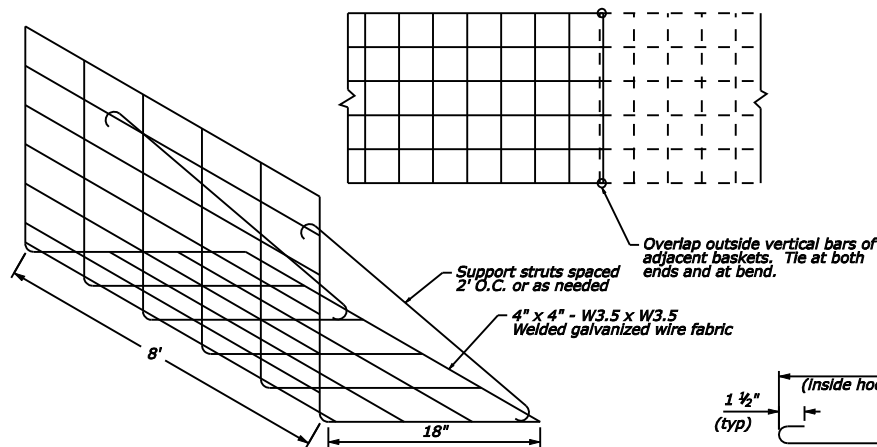
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ReSSA -- Reinforced Slope Stability Analysis Buckeye Vista Overlook

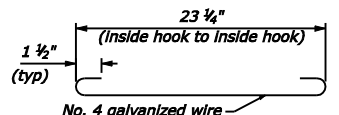
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APPENDIX G
Plan and Typical Sections

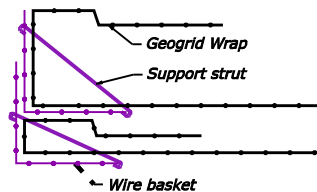
REG	STATE	PROJECT	SHEET NO.
8	AR	AR-PFH 159(1)	F2



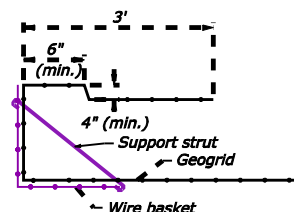
WIRE BASKET DETAIL



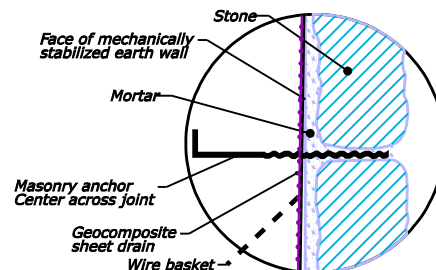
SUPPORT STRUT DETAIL



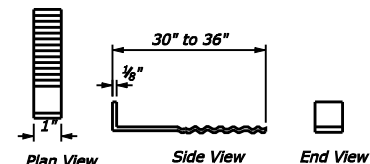
TOP WIRE BASKET DETAIL



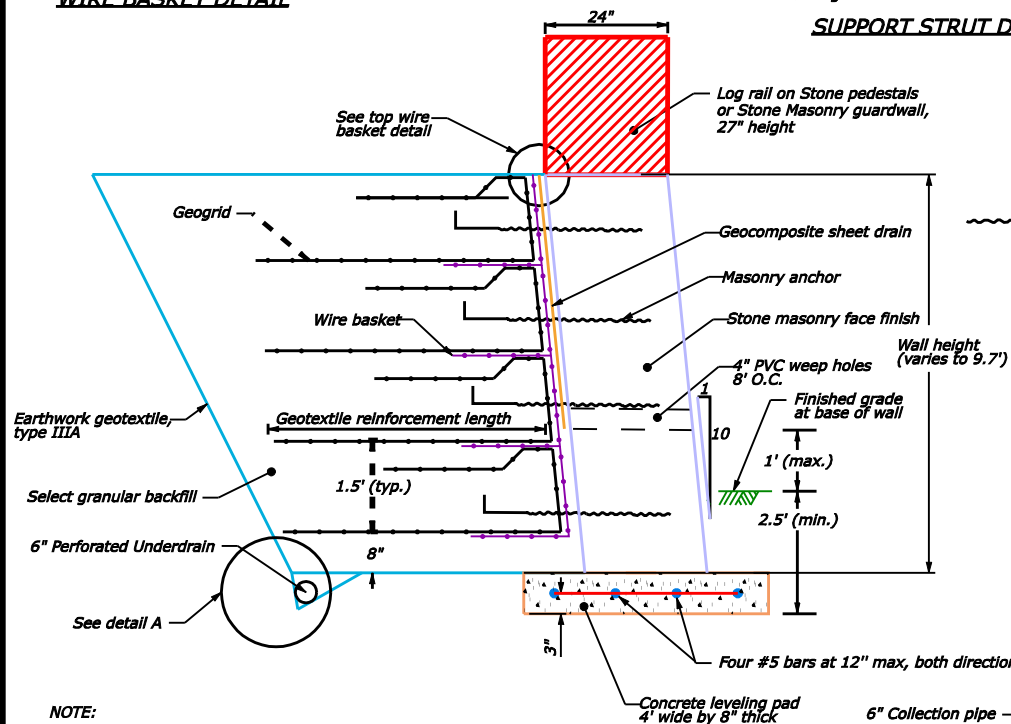
WIRE BASKET DETAIL



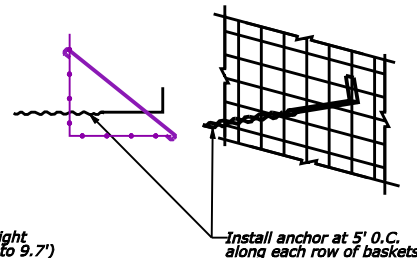
STONE MASONRY DETAIL



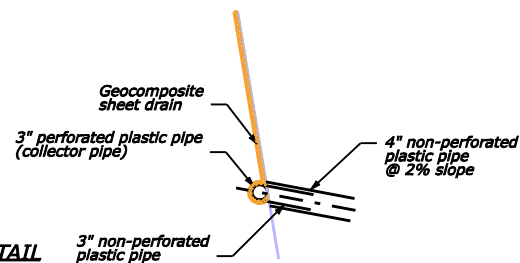
MASONRY ANCHOR DETAIL



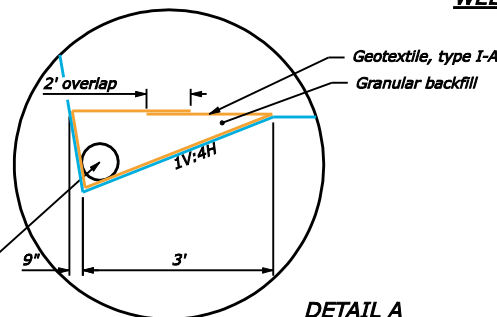
TYPICAL WALL SECTION



STONE FACING CONNECTION DETAIL



WEEP HOLE CONNECTION DETAIL



DETAIL A

NOTE:
Outlet underdrain at low points
or as directed by the CO.

SHEET 1 of 2	
U.S. DEPARTMENT OF TRANSPORTATION FEDERAL HIGHWAY ADMINISTRATION EASTERN FEDERAL LANDS ADMINISTRATION DIVISION	
DETAIL	
MECHANICALLY STABILIZED EARTH WALL WITH MASONRY FACE FINISH	
DETAIL APPROVED FOR USE	DETAIL
REVISED:	E255-A

APPENDIX H
Representative Photographs



Photo No. 1

Subject wall



Photo No. 2

Close-up



Photo No. 3

Vertical crack



Photo No. 4

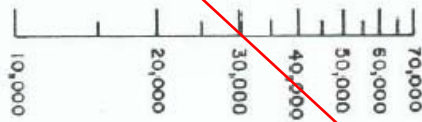
Width of the vertical crack

APPENDIX I
Gravel Road Design Chart

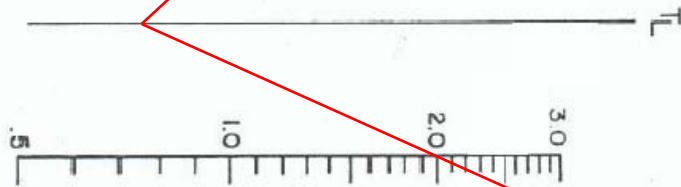
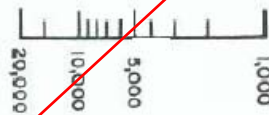
Allowable 18-kip Equivalent
Single Axle Load Applications, $W_{18_{RUT}}$ (thousands)



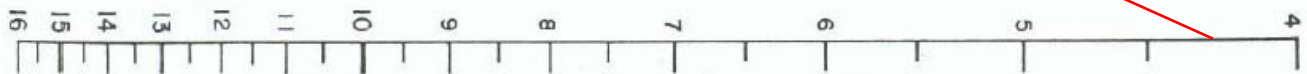
Modulus of Aggregate Base Layer, E_{BS} (psi)



Resilient Modulus of Roadbed
Material, M_R (psi)



Allowable Rut Depth, RD (inches)



Thickness of Aggregate Base Layer Considered
for Rutting Criteria, D_{BS} (inches)